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ABSTRACT

An inservice educational television course, which offered individualized experience in diagnosing specific reading problems and in locating remedial materials, was beamed by communication satellite to 286 elementary school teachers in the Appalachian region. Course evaluation concluded that: (1) participants demonstrated a significant gain in the cognitive area; (2) participants preferred programs which balanced theory and practice; (3) participants scored a nonsignificant change in attitude; (4) site coordinators needed more training as facilitators; (5) a more efficient system of question relay and question screening should be utilized; (6) teacher-to-teacher exchange and field work were highly rated; (7) information retrieval systems would be utilized more frequently if the site coordinator possessed more training, the video program was improved, and the recommended materials were more accessible; (7) equipment performance was excellent; (8) participants considered the course experience valuable. Appendixes contain 25 tables and 4 illustrations, questionnaires, and evaluation forms. This was one of four Appalachian Education Satellite Projects. (NR)

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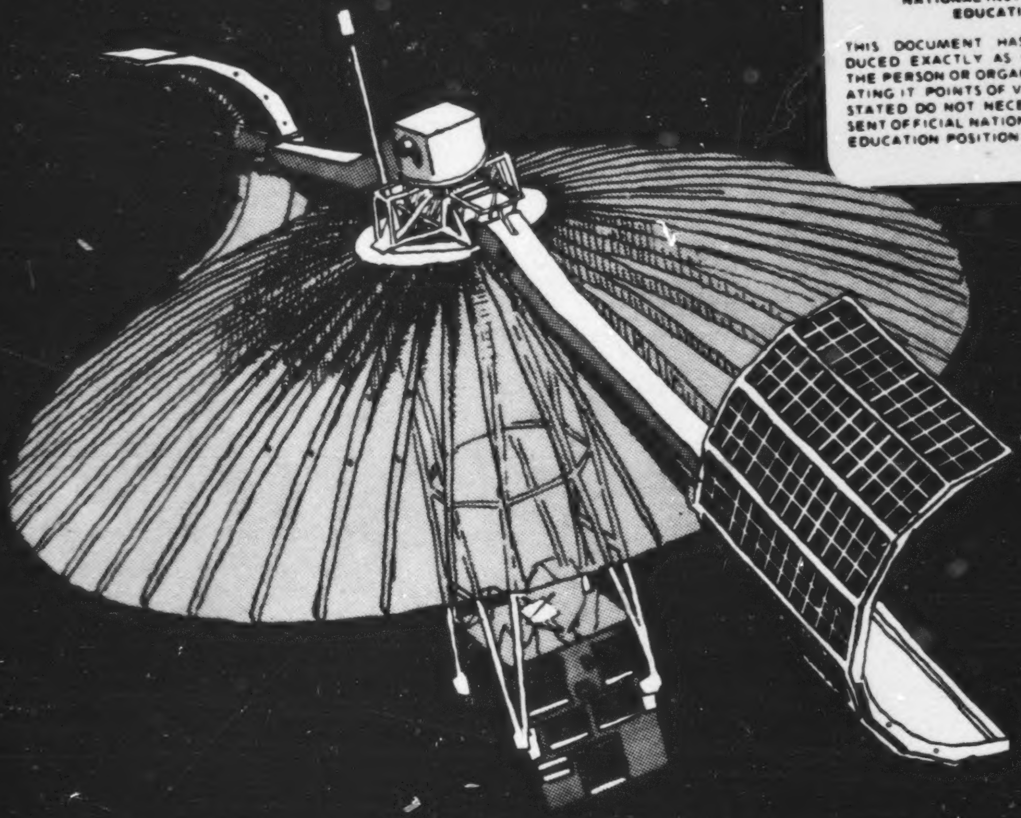

Evaluation: DPRI 2

aesp
appalachian
education
satellite
project

Technical Report

number 12

SUMMATIVE EVALUATION OF DIAGNOSTIC AND PRESCRIPTIVE READING INSTRUCTION K-6 COURSE, SPRING, 1975

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Prepared by

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September, 1975

The Technical Report Series of the Appalachian Education Satellite Project is edited and published by the RCC Evaluation Component at the University of Kentucky, Lexington, Kentucky.

The purpose of this series is to document and disseminate information about the design, implementation and results of the AESP experiment.

William J. Bramble and Cathy Whitton

Editors

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9. Student Achievement: Career Education in the Elementary Grades, Summer, 1974. Prepared by Rodger Marion, William J. Bramble and Claudine Ausness. August, 1975.

10. Cost Estimation Model for Alternative Course Formats and Delivery Modes. Prepared by William J. Bramble and Claudine Ausness. September, 1975.

11. Summative Evaluation of Career Education in the Secondary School Course, Fall, 1974. Prepared by Diane Maynard, Rodger Marion and William J. Bramble. September, 1975.

12. Summative Evaluation of Diagnostic and Prescriptive Reading Instruction K-6 Course, Spring, 1975. Prepared by William J. Bramble, Diane Maynard and Rodger Marion. September, 1975.

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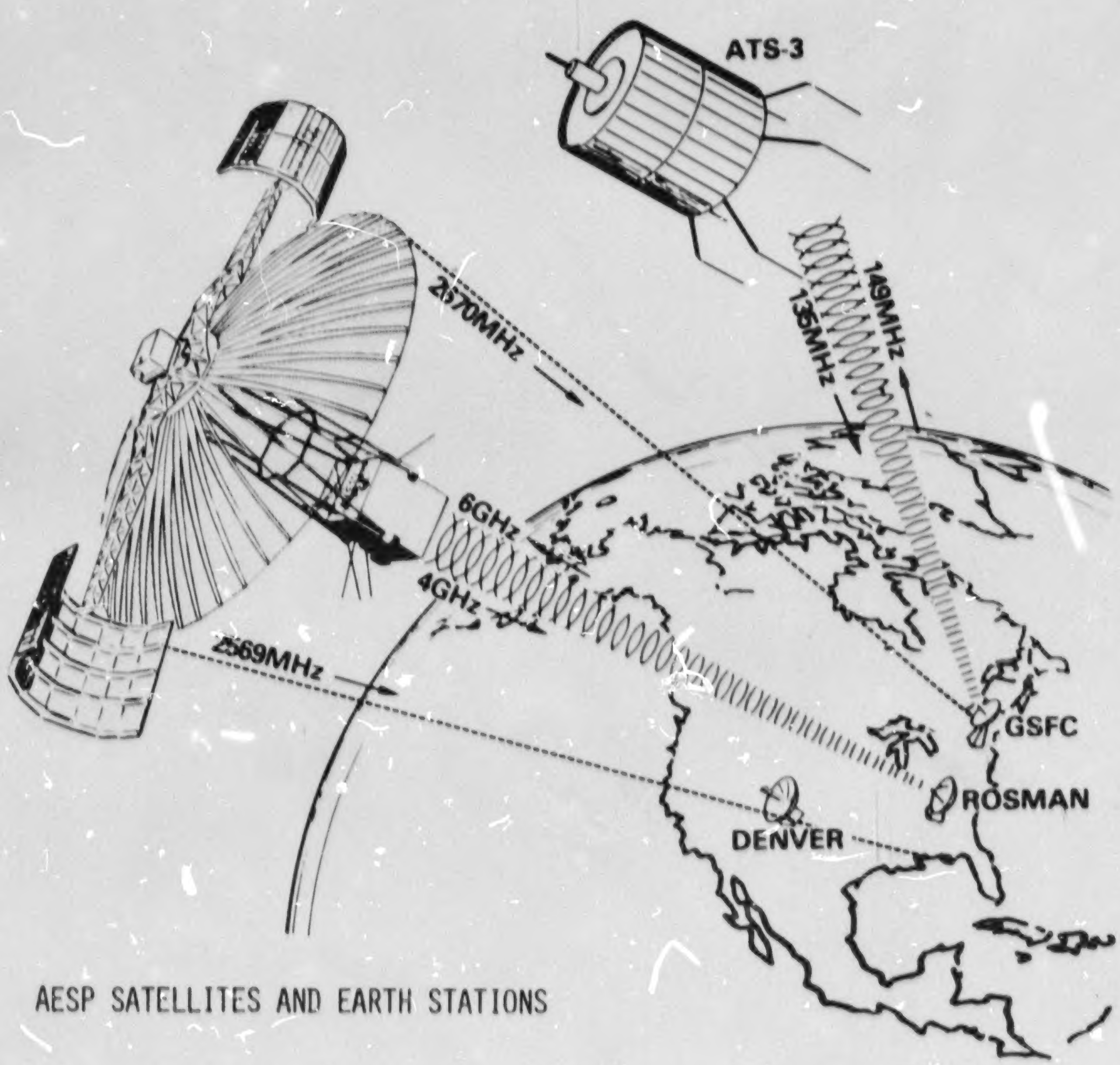
INTRODUCTION

The launching of the Applications Technology Satellite Number Six in May, 1974, signified the beginning of the use of communications satellites for educational television purposes. One of the three educational users of ATS-6 was the Appalachian Education Satellite Project (AESP) which, by means of satellite transmission, has offered four graduate-level teacher training courses--two in career education and two in elementary reading--to 1200 teachers in eight Appalachian states. An illustration of the ATS Satellites and earth stations is provided on the following page.

In July, 1974, AESP inaugurated ATS-6 communication with the first ETV graduate-level program and later with the first live, interactive seminar by satellite; however, work on the project began much earlier. In 1971, a survey conducted by the Appalachian Regional Commission (ARC) revealed that Appalachian teachers wanted more in-service training in the fields of reading and career education. When the Commission learned that ATS-6 transmission time would be available for educational uses, a program was planned to utilize the capability of such a satellite to deliver training programs to people in an area which includes many relatively isolated, inaccessible communities.

As part of this program, ARC chose five main Regional Education Service Agencies (RESAs) within the satellite's transmission area to


ATS-3
149MHz
136MHz
2570MHz
6GHz
4GHz
2569MHz
GSFC
ROSMAN
DENVER

AESP SATELLITES AND EARTH STATIONS

coordinate and implement the project on the local level. Two ancillary sites for receiving satellite transmissions were affiliated with each main site, for a total of fifteen receiving sites where teachers could meet for "classes" via satellite.

In addition to choosing RESAs, the Commission selected a Resource Coordinating Center (RCC) to develop, produce and evaluate all software and programming for the four courses offered. The ARC decided to choose a university as the RCC for a number of reasons; most important, though, was the fact that many universities would already have most of the necessary people and physical resources needed to develop software particularly appropriate to the technology available. Eleven institutions responded to ARC's request for proposals. The University of Kentucky in Lexington was chosen as the Resource Coordinating Center for the AESP.

The RCC was organized into six components: reading, career education, instructional television, four-channel audio, information systems, and evaluation. The reading component was responsible for the development of two courses in diagnostic and prescriptive reading instruction. The first of these two courses was broadcast in the summer of 1974 to an audience of approximately 300 kindergarden through third grade teachers. Each of the twelve sessions of the course incorporated such learning activities as half-hour, videotaped instructional programs; fifteen-minute, four-channel audio instruction; ancillary instructional materials; and evaluation activities. In addition, three times during the course students participated in a live, interactive seminar in which they had an opportunity to query course designers and experts in the area of diagnostic and prescriptive reading instruction.

The career education component had similar responsibilities for a course in career education in the elementary grades for the summer of 1974. The format was similar to the reading course, offering twelve half-hour videotaped programs, supplementary materials, and four live, interactive seminars.

The fall of 1974 marked the introduction of a career education course for secondary school teachers and administrators composed of 16 hour-long live, interactive seminars. This course format enabled students to interact with notables in the field of career education and communicate questions to seminar participants through radio and teletype hook-ups (via satellite) with the studio.

In the spring of 1975 a second course in diagnostic and prescriptive reading instruction was offered. The audience for this course was approximately 300 kindergarden through sixth-grade teachers. Using the first DPRI course as a building block, this course incorporated seven new videotaped television programs into the series. A picture of course participants watching one of the programs is presented on the following page. Ancillary materials, live, interactive seminars, and four-channel audio segments were revised to reflect audience changes. In both of these courses the reading component was responsible for script and ancillary materials development. The Component Director also insured that these courses met academic standards for the University of Kentucky and other cooperating universities which granted three semester hours of graduate-level credit for each course. It is the purpose of this report to examine this course in detail, by focusing on the course production, technical aspects, and the participants' reactions to and learning increments gained in the course.

Indoor Equipment for Television Reception of
Satellite Signals at Fredonia, New York

Course Overview

The spring 1975 Diagnostic and Prescriptive Reading Instruction (DPRI) course was designed to offer teachers individual experience in diagnosing children's specific reading problems and locating materials to remedy those problems. The course featured classroom teachers and students who illustrated new and innovative reading techniques. The course was practical, classroom-oriented, and provided teachers with the following:

- diagnostic procedures
- procedures for combining diagnostic with prescriptive instruction
- prescriptive instructional techniques

Course Structure

Students were able to choose from three options for course credit:

1. A K-3 program
2. A 4-6 program
3. A K-6 program

In completing any one of the three options, the students completed 13 units of study. This involved selecting 13 TV programs from the total series of 17, and completing the associated laboratory and four-channel activities. Upon completion of the chosen enrollment program, each participant was granted three semester hours of graduate credit.

Course Content and Objectives

The topics and objectives for the seventeen programs* were:

PROGRAM 1: DPRI INTRODUCTION -- K-3, 4-6, K-6

1. identify reading sub-skills
2. identify the parts of the diagnostic-prescriptive reading instruction model
3. realize the importance of early diagnosis and correction of reading problems

PROGRAM 2: INFORMAL TESTS -- K-3, 4-6, K-6

1. recognize the advantage of informal reading tests
2. interpret the results of informal reading tests
3. identify the sequence of activities involved in constructing an informal reading inventory

The Potter and Rae book, Informal Reading Diagnosis, from the reference shelf, was used.

PROGRAM 3: STANDARDIZED TESTS -- K-3, 4-6, K-6

1. identify the procedures necessary for effective administration of standardized tests
2. interpret the results of standardized tests
3. recognize the strengths and limitations of standardized tests

The Stanford Achievement Test, Primary I and II and the Murphy-Durrell Reading Readiness Analysis was used.

---

*Although programs from the previous DPRI course (DPRI K-3, Summer, 1974) were used in this course, (DPRI K-6, Spring, 1975) they were not used in the same numerical sequence. Therefore, requests for information on the taped programs for either DPRI course should specify which course is being referred to.

PROGRAM 4: WORD RECOGNITION TEST -- K-3, K-6 option with Program 5

1. administer and interpret the results of the Wisconsin Design for Reading Skill Development: Word Attack
2. connect diagnosis to the instructional materials
3. identify the sequence of activities involved in going through a complete test-teach-test instructional cycle using the WDRSD:WA

The Wisconsin Design for Reading Skill Development: Word Attack was used.

PROGRAM 5: COMPREHENSION AND STUDY SKILLS TESTS -- 4-6, K-6 option with Program 4

1. administer and interpret the results of the Fountain Valley Teacher Support System in Reading
2. connect diagnosis to instructional procedures
3. identify the sequency of activities involved in going through a complete test-teach-test cycle
4. determine the steps a total school needs to go through in implementing DPRI

The Fountain Valley Teacher Support System in Reading was used.

PROGRAM 6: MISCUE ANALYSIS -- K-3, 4-6, K-6

1. identify and do the sequence of activities involved in administering the reading miscue inventory
2. categorize reading miscues
3. compile the results of the reading miscue inventory on coding sheet
4. identify Wayne's reading strengths and weaknesses

The Reading Miscue Inventory was used.

PROGRAM 7: PRESCRIPTIVE INSTRUCTIONAL SYSTEMS -- K-3, 4-6, K-6

1. translate test results into words (descriptors) that can be used to find materials in the retrieval systems
2. identify the sequence of steps in the process of materials selection
3. determine which skill descriptors are most appropriate for each student
4. recognize the strengths and limitations of different retrieval systems

Selected Retrieval Systems was used.

PROGRAM 8: DPRI MANAGEMENT -- K-3, 4-6, K-6

1. identify several patterns of grouping
2. assess the strengths and limitations of grouping patterns
3. determine the most appropriate grouping pattern in a given situation
4. recognize reasons for using a grouping pattern in a given situation

PROGRAM 9: READING READINESS AND BEGINNING READING -- K-3, K-6 option with Program 10

1. identify activities used to teach reading readiness and beginning reading
2. list advantages and disadvantages of the activities
3. determine which activity is most appropriate for a given situation

The Teaching of Reading served as a resource for Programs 9-17.

PROGRAM 10: THE EXCEPTIONAL READER -- 4-6, K-6 option with Program 9

1. identify activities and procedures to teach the low average and gifted reader
2. list advantages and disadvantages of each of the activities
3. determine which activity is most appropriate for a given situation

PROGRAM 11: WORD RECOGNITION -- K-3, 4-6, K-6

1. identify activities used to teach word identification
2. list advantages and disadvantages of the activities
3. determine which activity is most appropriate for a given situation

PROGRAM 12: VOCABULARY -- K-3, K-6 option with Program 13

1. identify activities used to teach vocabulary
2. list advantages and disadvantages of the activities
3. determine which activity is most appropriate for a given situation

PROGRAM 13: STUDY SKILLS -- 4-6, K-6 option with Program 12

1. identify activities used to teach study skills
2. list advantages and disadvantages of the activities
3. determine which activity is most appropriate for a given situation

PROGRAM 14: COMPREHENSION -- K-3, K-6 option with Program 15

1. identify question strategies used to teach comprehension
2. write questions to stimulate student responses in various categories (i.e. knowledge, translation, etc.)
3. determine the most appropriate question strategy for a given situation

PROGRAM 15: READING IN THE CONTENT FIELDS -- 4-6, K-6 option with Program 14

1. identify activities used to teach reading in the content fields
2. list advantages and disadvantages of the activities
3. determine which activity is most appropriate for a given situation

PROGRAM 16: DEVELOPING LIFE-LONG READERS -- K-3, 4-6, K-6

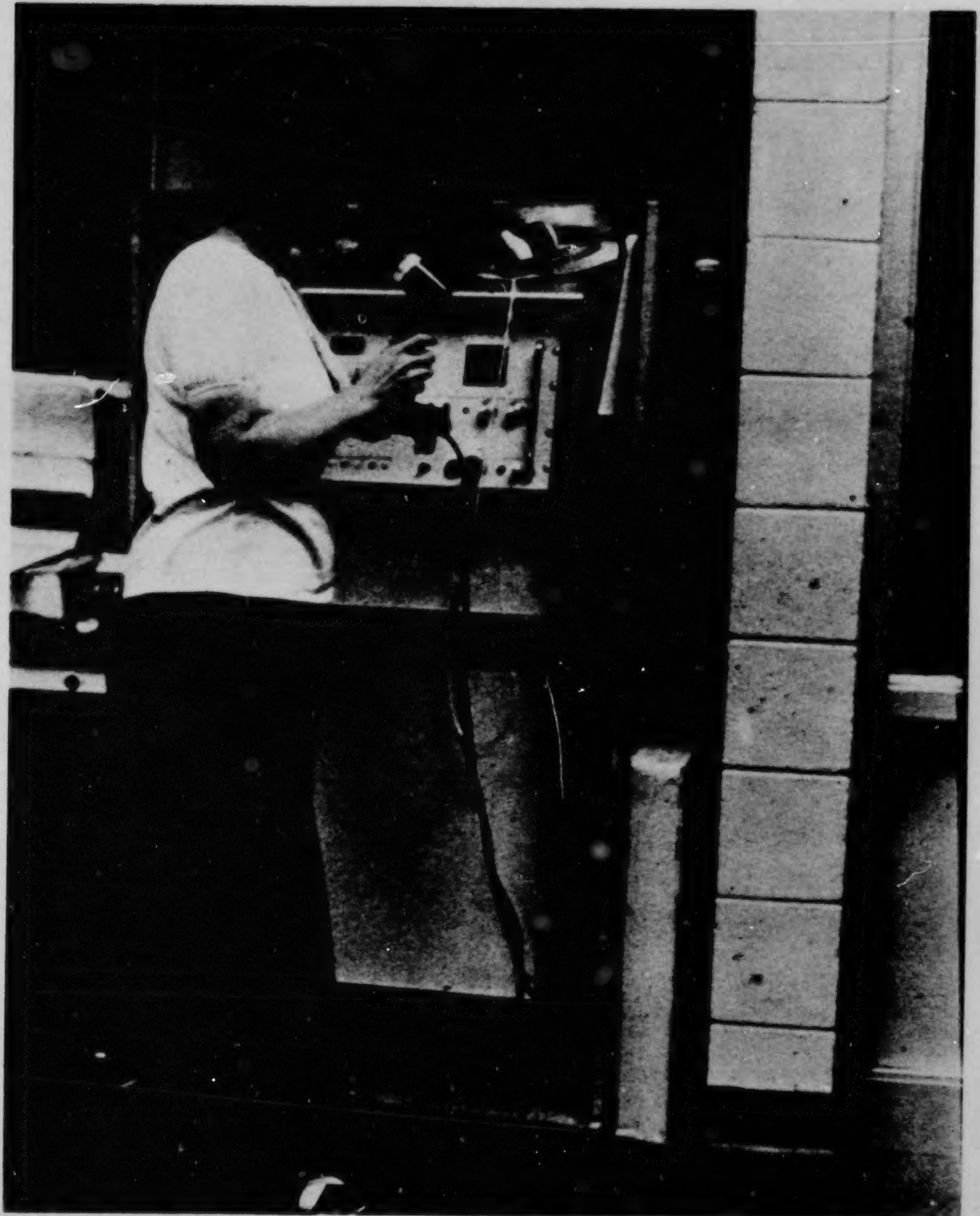
1. identify activities that assist in the development of reading interests and tastes
2. list advantages and disadvantages of the activities
3. determine which activity is most appropriate for a given situation

PROGRAM 17: TOTAL READING PROGRAM -- K-3, 4-6, K-6

1. identify ways to encourage parental participation in reading programs
2. recognize the strengths and limitations of DPRI
3. determine ways to implement diagnostic-prescriptive reading instruction in a total reading program
4. determine ways to establish priorities for implementation of DPRI

In addition all students participated in five, hour-long live, interactive seminars. These seminars were designed to provide students with the opportunity to interact with course designers and experts in the field of reading. A picture of a site coordinator transmitting seminar questions to panel experts is presented on the following page.

Preprogram, laboratory and follow-up activities were carefully outlined for each program in the ancillary materials packets supplied to each student. An important part of these activities was the assignment that each course participant was asked to identify an elementary school student to work with throughout the duration of the course. Working with a student gave each participant practical experience in working with tests and testing procedures.



Huntsville, Alabama Site Transmitting
Seminar Questions Via VHF Satellite Delivery System

In addition to the ancillary materials packet, each course participant was provided with the following materials free of charge:

Dallman, Martha, and others. The Teaching of Reading. New York: Holt, Rinehart, and Winston, Inc., 1974.

Goodman, Yetta, and Carolyn Burke. Reading Miscue Inventory Manual. New York: The MacMillan Company, 1971.

Homme, Lloyd. How to Use Contingency Contracting in the Classroom. Champaign, Illinois: Research Press Co., 1970.

Madden, Richard, and others. Stanford Reading Test, Primary I, II, and Intermediate I. New York: Harcourt, Brace, and Jovanovich, Inc., 1972. Specimen Sets.

Murphy, Helen, and Donald Durrell. Murphy-Durrell Reading Readiness Analysis. New York: Harcourt, Brace, and Jovanovich, Inc., 1964. Specimen Set.

Otto, Wayne and Eunice Askow. The Wisconsin Design for Reading Skill Development: Word Attack. Minneapolis, Minnesota: National Computer Systems, Inc., 1972.

Zweig, Richard L. Fountain Valley Teacher Support System in Reading. Richard L. Zweig Association, Inc., 1972.

Supporting Components

The television component, a part of the Media Services Division of the University of Kentucky, played a major role in course development. Its facilities and personnel were used in producing and delivering 17 half-hour videotaped programs; five live, interactive seminars; and seven fifteen-minute four-channel audio reviews for this course.

This component was also very much involved in the formative stages of course development. Since field filming of exemplary classrooms was incorporated into the programming, the producer-director and content experts worked closely in planning and developing each televised program.

The exemplary classrooms were chosen from those identified by the five main RESAs, and were thus representative of the different regions the course served.

Two other supporting components incorporated in this course tested the communication capabilities of the satellite and helped to insure the success of the course. One was the four-channel audio instructional system which was used to reinforce learning in the video programs. To complete the audio review, each participant was equipped with a head phone set and an answer selection pad with four response buttons. After receiving programmed audio instruction in the form of a hypothetical description of a teaching situation and four alternative approaches to the problem posed, the teacher selected a response by pushing a button. The teacher then heard pre-recorded feedback which reinforced the selection of the correct answer or corrected any misunderstanding if an inappropriate response had been made.

The other supporting component unique to the Appalachian Education Satellite Project and used in this course was the computer-based information retrieval system. This consisted of a combination of computer-based and manual information systems for storing, retrieving and delivering to teachers in their communities information and references for instructional materials. Course participants asked for information by specifying grade level, subject area, objectives, and the nature and diversity of the students in the class they were teaching. Requests were relayed via satellite to the RCC where they were processed. The teachers then received lists of activities and resources for both themselves and their pupils.

Formative and summative evaluation procedures were developed and implemented by the evaluation component. The formative evaluation process assisted with the development of the course. The evaluation component was also responsible for the summative evaluation of the course, including pre- and posttest measures of cognitive and affective achievement, the degree of classroom implementation of the teaching strategies and procedures presented in the course, and participant ratings of the learning activities produced for the course.

In examining this course, the focus will be on answers to the following questions:

- How much did the course participant learn?
- How effective were the learning activities included in the course? How might they be improved?
- How reliable was the equipment used in conducting the course?
- How valuable were the information systems that were available to course participants?
- What was the overall rating of the course?

METHOD

Subjects

About twenty participants were enrolled at each of the fiteen sites for the DPRI K-6 course. The number varied because some sites requested that additional students be allowed to enroll due to the demand for reading instruction for classroom teachers in the area; where the facilities could accommodate more students, they were enrolled. In total 315 participants took the pretest and 286 completed all course requirements. Complete data (all cognitive and affective pre- and posttest) for analysis were available for 282 participants. The number of participants at each site by course option is presented in Table 1.

A combined attitude and background questionnaire was administered to the course participants prior to the first televised lecture. This questionnaire which is presented in Appendix 1 was divided into two parts. The first part was concerned with the participants' attitudes toward reading, and the second part asked for some background information concerning educational practices and teaching experience. Table 2 summarizes the background information obtained.

TABLE 1

DISTRIBUTION OF PARTICIPANTS BY OPTIONS BASED ON FINAL EXAMS
(Complete Data Cases Only)

Site	Option			Total
	K-3 (1)	4-6 (2)	K-6 (3)	
11 Fredonia, N.Y.	4	3	13	20
12 Olean, N.Y.	9	4	8	21
13 Edinboro, PA	4	3	7	14
21 Lafollette, TN	6	6	15	27
22 Coalfield, TN	8	5	4	17
23 Johnson City, TN	9	0	10	19
31 Norton, VA	6	3	2	11
32 Sticklyville, VA	6	0	9	15
33 Boone, N.C.	0	0	18	18
41 Cumberland, MD	3	0	18	21
42 Keyser, W.V.	12	3	4	19
43 McHenry, MD	3	5	11	19
51 Huntsville, AL	4	3	20	27
52 Guntersville, AL	3	0	16	19
53 Rainsville, AL	8	5	2	15
TOTAL	85	40	157	282

TABLE 2

SUMMARY BACKGROUND INFORMATION FOR SPRING READING COURSE PARTICIPANTS
(N=308)

Item	Responses	Frequency	Percentage
Type of community where participant worked	Rural	204	66.0
	Suburban	46	15.0
	Urban	54	18.0
	No Response	4	1.0
Sex	Male	59	19.0
	Female	248	80.5
	No Response	1	0.5
Age	21 - 23	58	19.0
	24 - 26	69	22.0
	27 - 30	46	15.0
	31 - 40	65	21.5
	41 - 50	50	16.0
	51 - 60	18	6.0
	61 and over	0	0.0
	No Response	2	0.5
Position during 1974-75 academic year	Classroom Teacher	194	63.0
	Reading Specialist	25	8.0
	Special Education Teacher	28	9.0
	Counselor	2	1.0
	Principal	4	1.0
	School Administration	9	3.0
	Other	41	13.0
	No Response	5	2.0
Grade level taught	Elementary - all grades	77	25.0
	K	28	9.0
	1	32	10.0
	2	26	8.0
	3	34	11.0
	4	33	11.0
	5	19	6.0
	6	25	8.0
	7-12	30	10.0
	No Response	4	2.0

TABLE 2--CONTINUED

Item	Response	Frequency	Percentage
Work experience in teaching	1 year or less	62	20.0
	2-3 years	62	20.0
	4-5 years	50	16.0
	6-8 years	35	11.0
	9-10 years	15	5.0
	11-15 years	42	14.0
	16-20 years	23	7.0
	21 years or more	19	7.0
Experience as reading specialist	None	249	89.5
	1 year or less	21	7.0
	2-3 years	8	3.0
	4-5 years	5	2.0
	6-7 years	2	1.0
	8-9 years	3	1.0
	10 or more years	1	0.5
	No Response	19	6.0
Undergraduate GPA (4 points = A)	Less than 2.25	6	2.0
	2.26-2.50	24	8.0
	2.51-2.75	68	22.0
	2.76-3.00	76	25.0
	3.01-3.25	46	15.0
	3.26-3.50	40	13.0
	3.51-4.00	31	10.0
	No Response	17	5.0
Graduate GPA (4 points = A)	Less than 3.0	4	1.0
	3.01-3.25	22	7.0
	3.26-3.50	23	7.0
	3.51-3.75	57	18.0
	3.76-4.00	74	24.0
	No Response	128	43.0
Last Degree completed	High School Diploma	7	2.5
	Baccalaureate	220	21.5
	Masters	68	22.0
	Specialist	4	1.0
	Doctorate	1	0.5
	No Response	8	2.5

TABLE 2--CONTINUED

Item	Response	Frequency	Percentage
Number of undergraduate reading courses	None	104	34.0
	1	92	30.0
	2	58	19.0
	3	14	4.5
	4	7	2.0
	5 or more	10	3.0
	No Response	23	7.5
Number of graduate reading courses	None	184	60.0
	1	42	14.0
	2	18	6.0
	3	7	2.0
	4	8	2.0
	5 or more	6	2.0
	No Response	43	14.0
Enrolled in college degree program	Baccalaureate	6	2.0
	Masters	92	30.0
	Specialist	11	3.5
	Doctorate	2	0.5
	Enrolled but not in degree program	48	16.0
	Enrolled in courses to maintain teacher certification	35	11.0
	Not enrolled	64	21.0
	No Response	50	16.0

Procedures and Instrumentation

To obtain meaningful summative evaluation data for the course, the evaluation component relied upon well-defined procedures and a variety of instruments. (Copies of all instruments except the cognitive pretest, midterm and posttest, appear in Appendix 1.) Table 3 presents the timeline for the course, the instructional activities scheduled for each class session, and the evaluation instruments administered throughout the course.

Achievement Tests

Prior to the first class session all students completed a pretest which was composed of 63 multiple-choice questions measuring students' cognitive knowledge about diagnostic and prescriptive reading instruction. Following the eighth class meeting students were administered a midterm test. This examination was composed of two parts. The first part contained 35 items based on information contained in the first seven video programs. The second part, composed of twenty items, served as a pretest for four of the last ten programs that were not covered on the initial pretest. This procedure was necessary because of the inability of the Reading Component to provide detailed information about these four programs prior to the start of the course. Thus, these items were constructed after the course began. During the final class meeting a posttest was administered. This test was composed of three separate forms, one for each of the class choices: K-3, 4-6, and K-6. Each version was composed of thirty items which related to the last ten programs. Together, these tests were used to measure the learning in the area of reading which occurred as an outcome of the course.

TABLE 3

SCHEDULE OF INSTRUCTIONAL ACTIVITIES

Sessions	Activities				
January 14 - May 20, 1975	*Evaluation	TV Programs	Seminars	4-Channel Reviews	Laboratory Sessions
1 (1/14/75)	Pretest Attitude Test Background Questionnaire				
2 (1/21/75)		1 & 2			X
3 (1/28/75)		3		X	X
4 (2/4/75)			1		
5 (2/11/75)		4 & 5			X
6 (2/18/75)		6		X	X
7 (2/25/75)		7		X	X
8 (3/4/75)	Pre- and Post-test		2		
9 (3/11/75)		8		X	X
10 (3/18/75)		9 & 10			X
11 (3/25/75)		11		X	X
12 (4/8/75)			3		
13 (4/15/75)		12 & 13			X
14 (4/22/75)		14 & 15			X
15 (4/29/75)		16		X	X
16 (5/6/75)			4		
17 (5/13/75)		17		X	X
18 (5/20/75)	Posttest Attitude Test Information Systems Questionnaire Summative Comments Form		5		

*In addition to the evaluation instruments listed on the table,

1) the Site Coordinator's Checklist was completed after each class session by the site coordinator; and

2) the Class Rating Form was completed by approximately 1/2 of the participants after each TV program, seminar, 4-channel activity and laboratory.

Attitude Questionnaire

The attitude portion of the Combined Attitude and Background Questionnaire was administered to participants on a pre-post basis. The instrument contained 27 Likert scale items, with 1 = completely disagree and 8 = completely agree. The purpose of this instrument was to measure participants' affective attitudes toward the procedures, techniques, and theory of diagnostic and prescriptive reading instruction.

Factor analysis of the instrument revealed a unifactor structure. The first factor accounted for 70% of the estimated common variance. Loadings for this factor are presented in Table 4. Items having loadings less than +.30 or greater than -.30 were deleted for purposes of scoring. Responses to the 21 items remaining on the scale were added together to provide a single measure of the participants' attitude toward the concepts and methods of instruction presented in the course. Item scores were reversed for negatively worded items.

Site Coordinator's Checklist

At the end of each class meeting the site coordinator completed the Site Coordinator's Checklist. Using this simple checklist, equipment trouble and the audio and video strength were reported. This instrument also solicited the site coordinator's subjective evaluation of the students' satisfaction with the seminar and lab activities.

Class Rating Form

After each class session, approximately one-half of the students completed a Class Rating Form (CRF). This questionnaire dealt with the participants' reactions to the day's instructional activities. The

TABLE 4

FACTOR LOADINGS FOR ATTITUDE POSTTEST*

Item #	Content	Factor Loading
1.	Reading instruction should focus on comprehension.	.28**
2.	Students should be exposed to a variety of experiences.	.49
3.	Analysis of oral reading miscues is worthwhile.	.20**
4.	Integrate reading with all other classroom activities.	.33
5.	Contingency contracting is worthwhile.	.52
6.	Reading readiness can be developed in students.	.45
7.	Information systems linking diagnosis and instruction are valuable.	.47
8.	Vocabulary should be taught through real-life experiences.	.21**
9.	Grouping on skill needs is more valuable than on instructional level.	.26**
10.	Students should not all read the same thing.	.53
11.	Teachers should not diagnose students only in the fall.	.49
12.	Emphasis given to phonics changes with student needs.	.22**
13.	Teachers should diagnose student reading problems.	.26**
14.	Informal tests are used for placing students at right levels.	.32
15.	Prescriptive instruction is the best way to teach reading.	.45

TABLE 4--CONTINUED

Item #	Content	Factor Loading
16.	A child should not necessarily read all the way through a book.	.45
17.	Kindergarten teachers should worry about comprehension.	.58
18.	Work with individuals, even in a large class.	.48
19.	Third grade teacher needs more than third grade materials.	.82
20.	Understanding graphs and tables is an aspect of reading instruction.	.64
21.	A good reader need not necessarily read every word correctly.	.57
22.	Every page in a workbook need not be used.	.65
23.	Scores on standardized tests aren't adequate for instruction.	.52
24.	There are things a teacher can do to generate enthusiasm.	.62
25.	Time spent diagnosing is well spent.	.61
26.	Effective materials don't necessarily include one copy per student.	.55
27.	Free reading can be productive.	.85

*Items are paraphrased. Negative items are reworded to appear in the positive direction. Signs for loadings are consistent with these rewordings.

**Item deleted for scoring purposes.

questionnaire sought reactions to the TV programs, four-channel audio activities, the live, interactive seminars, and the laboratory activities. On a given day, the selected participants filled out only the parts of the form that corresponded to that day's activities. For purposes of completing this instrument the class participants were randomly divided into two groups and the responsibility for completing the instrument alternated between the two groups. Thus on a given class day roughly half of the participants completed the appropriate sections of the CRF.

Information Systems Questionnaire

During the last class session participants completed the Information Systems Questionnaire (ISQ). This instrument had two parts. Part I was concerned with the participants attitudes toward the information systems presented in class. The fourteen items in Part I were Likert items to which participants responded on a scale where one equaled strongly agree with the statement and five equaled strongly disagree with the statement. Means and standard deviations were calculated for each item in this section.

Part II of the instrument was concerned with the degree to which participants used information systems to assist them in developing course materials for the classes they teach. These items were of the yes/no variety and frequency counts of the responses were tabulated.

Summative Comments Form

The Summative Comments form was administered to measure student and site coordinator perceptions of the overall effectiveness of the course. On the first part answers were solicited to determine what site coordinators and participants specifically liked or disliked about the course. The second part asked them to rate ten instructional activities according to the quantity of useful information they received from each. The standard of reference was the average, graduate level course. An eight-point Likert scale (1 = outstanding to 8 = unacceptable) was used for the rating. Mean scores were calculated for each of the items.

RESULTS

In the introductory section it was stated that this report would attempt to answer five research questions. The results, which follow, are organized around and presented for each of these questions.

- How much did the course participants learn?

As may be seen in Table 5, several versions of the achievement tests were required to measure achievement over the several optional paths available in the course. In order to better analyze gains made in cognitive achievement, it was decided to use as the premeasure the percentage right out of all 83 pretest items; and as the postmeasure the percentage right out of the 35 midterm items plus the 33 final exam items selected by the student. An analysis of variance done on the pre- to post-gain, by course option, indicated no significant differences in achievement associated with the different course options. Thus, the option selected was not a variable that needed to be considered in the evaluation of pre- to postgains.

The analysis of variance design used for the gain analysis was as follows. It was decided to analyze gain on the attitude scale along with the achievement test gain. Thus, a multivariate analysis of variance (MANOVA) was appropriate. Procedures described by Finn (1968, 1969) for repeated measures designs were followed. The MANOVA included three factors

TABLE 5

RELIABILITIES, MEANS, AND STANDARD DEVIATIONS OF COGNITIVE ACHIEVEMENT TESTS

Test	Number of Items	KR-20	Mean	SD	N
Pretest	63	.697	29.02	6.54	315
Pretest portion of Midterm - Fountain Valley Option	20	.445	10.96	2.79	96
Pretest portion of Midterm - Wisconsin Design Option	20	.551	11.23	3.08	194
Midterm - Fountain Valley Option	30	.527	21.70	3.16	96
Midterm - Wisconsin Design Option	30	.586	22.54	3.31	194
Final - K-3 Option	33	.667	22.38	4.07	87
Final - 4-6 Option	33	.642	23.71	3.81	42
Final - K-6 Option	33*	.668**	22.99	4.19	157

*This test actually had 48 items. However, there are three option points and each person only answered 33 items.

**The reliability was computed based on the 18 common items that each person answered regardless of the options he chose, and this value was scaled up to 33 items using the Spearman - Brown Prophecy formula (Nunnally, 1967, p. 223).

with repeated measures on the third factor. The first factor was RESA triangle (T). This factor had five levels and was considered to have fixed effects. The second factor was sites: since each site was associated with a RESA triangle, the sites were considered to be nested within triangles (S:T). This factor had three levels and was considered to have random effects. The third factor was pre- vs. postcourse administration (A); this factor had two levels.

The MANOVA revealed significant differences between and within triangles due to administrations (Table 6). To determine which of the dependent variables were affected, univarate and step-down F's were computed. These statistics indicated significant effects on the achievement variable for both A and A x S:T sources of variance (Table 7). Results of the MANOVA analysis for the precourse scores (Table 8) indicate that there were differences between sites on the achievement variable (Table 9). The MANOVA run on the postcourse scores (Table 10) revealed no significant differences attributable to triangles or sites.

The mean proportion right for the overall (combined) pre-achievement measure was .489 (sd = .101) and for the overall postmeasure was .714 (sd = .098). This post mean is fairly high, and it may be concluded that mastery of the material was achieved by the participants. Since many of the items had been used before, it was possible to screen out items that were too easy; thus, a mean of over 70% is quite good. The core of these achievement items was the set of criterion-referenced items written for the DPRI K-3 course offered during the summer, 1974. These items were selected and revised based on item reliability, difficulty, and discrimi-

TABLE 6

MULTIVARIATE ANALYSIS OF VARIANCE RESULTS

Source	df	Mult. F	p<
Between Subjects			
Triangles (T)	8,18	1.43	.25
Sites within Triangles (S:T)	20,532	1.52	.07
Within Subjects			
Administrations (A)	2,264	10.66	.0001
A x T	8,14	.60	.77
A x S:T	20,528	2.38	.0008

TABLE 7

UNIVARIATE AOV RESULTS FOR SIGNIFICANT MULTIVARIATE CONTRASTS

Contrast	Variable	Univ. F	p<	Step-Down F	p<
A	Achievement	21.39	.0001	21.39	.0001
	Attitude	.001	.97	.02	.89
A x S:T	Achievement	4.08	.0001	4.08	.0001
	Attitude	.79	.64	.79	.64

TABLE 8

MANOVA RESULTS FOR PRECOURSE MEASURES ONLY

Source	df	Mult. F	p<
Between Subjects			
T	8,18	.9222	.5213
S:T	20,532	1.9546	.0081

TABLE 9

UNIVARIATE AOV OF PRECOURSE MEASURES FOR SIGNIFICANT MANOVA CONTRASTS

Contrast	Variable	Univ. F	p<	Step-Down F	p<
S:T	Achievement	2.4073	.0094	2.4072	.0094
	Attitude	1.6676	.0884	1.5177	.1328

TABLE 10

MANOVA RESULTS POSTCOURSE MEASURES ONLY

Source	df	Mult. F	p<
Between Subjects			
T	8,18	1.3216	.2946
S:T	20,532	1.4124	.1098

nation indexes. By eliminating the easy and undiscriminating items, the nature of the achievement test changed. It became an instrument that discriminated among individuals based on content knowledge rather than a criterion-referenced instrument that covered all content, trivial or not. Basically, the test became harder, even though 20 new items were added for the new programs.

The reason no gains were recorded for the attitude scale may be that the participants' attitudes upon entry to the course were very positive and it was difficult for the attitude socres to be substantially improved as a function of the course. The pre- and postcourse means for the attitude scale items are presented in Table 11. (These means are not reversed; for obtaining the total score, responses to negative items were reversed). The precourse mean for the attitude scale was 147.288 (sd = 15.402) and the postcourse mean was 153.835 (sd = 16.521). These translate into mean item scores on the eight-point Likert scale of 7.014 (pre) and 7.325 (post) and a per item mean gain in attitude of .311.

- How effective were the learning activities included in the course? How might they be improved?

Information relative to the perceived effectiveness of each learning activity was obtained from the Class Rating Form and the Site Coordinator's Checklist. The learning activities rated were the televised programs, four-channel audio reviews, seminars and laboratory sessions. The Class Rating Form provided separate ratings for each activity on each class day. These ratings are summarized across occasions for each of the learning activities, that is, the frequencies of responses to each alternative of each item are

TABLE 11

ITEM MEANS FROM ATTITUDE SCALE

Item	Pre-Mean	SD	Post-Mean	SD
1	6.10	2.00	7.13	1.31
2	7.38	1.30	7.67	.89
3	2.64	1.80	4.25	2.39
4	7.44	1.42	7.63	1.00
5	2.76	1.85	1.89	1.45
6	1.56	1.54	1.56	1.53
7	7.07	1.28	7.01	1.31
8	6.61	1.46	7.04	1.20
9	6.15	1.95	6.52	1.88
10	1.45	1.05	1.29	.82
11	1.52	1.54	1.40	1.34
12	6.71	1.77	6.89	1.55
13	6.42	1.91	6.68	1.85
14	5.99	1.96	6.85	1.66
15	6.16	1.66	7.08	1.33
16	2.48	1.81	2.18	1.71
17	1.65	1.47	1.60	1.39
18	1.95	1.76	1.92	1.63
19	1.27	1.02	1.15	.70
20	1.64	1.30	1.51	1.21
21	1.98	1.53	1.84	1.44
22	1.85	1.44	1.51	1.13
23	2.62	1.79	1.99	1.49
24	1.66	1.37	1.52	1.20
25	2.18	1.62	1.76	1.40
26	2.47	2.04	1.96	1.58
27	1.51	1.18	1.21	.76

Note: 8 point Likert scale - 8 = agree 1 = disagree summed across all TV programs, four-channel audio reviews, seminars or laboratory sessions. These results are discussed in subsequent sections of the report. (For the mean ratings of individual activities see Appendix 2.) Table 12 presents the site coordinator ratings of participant satisfaction with the instructional activities. The frequencies in this table correspond to separate activities except for the ratings of televised programs where two programs were presented on a single day. In this case the rating is given for the two televised programs together.

There is considerable variation in the ratings of activities across occasions, and this information is valuable for program revision or as a guide to the development of new programming of a similar nature. Space does not permit a thorough discussion of each separate televised program, lab activity, etc. Therefore, the focus of this section will be on the overall participation ratings taken from the Class Rating Form (Tables 13-16) and on the site coordinator ratings reported in Table 16. Representative student comments will be introduced where appropriate to illustrate the general points that are made.

Televised Programs

As shown in Table 13 (Part I of the CRF) participant evaluation of the programs (item 14) was "good" to "very good". Assigning point values of 5 for excellent to 1 for poor to the possible responses for the question, a median rating of 3.68 was obtained on this item. Responses to the other items reflected the same general level of satisfaction with the programs. Students expressed little concern for major revisions of the televised

TABLE 12

FREQUENCY OF SITE COORDINATORS RATINGS OF PARTICIPANT SATISFACTION WITH INSTRUCTIONAL ACTIVITIES

Session	Program*	TV Program			4-Channel			Laboratory		
		High	Moderate	Low	High	Moderate	Low	High	Moderate	Low
2	TV-1,2	12	3	0		**		10	2	2
3	TV-3	13	2	0	8	6	0	10	5	0
4	S-1	3	7	0		**		2	1	1
5	TV-4,5	13	1	0		**		10	3	0
6	TV-6	10	4	0	7	5	1	8	5	0
7	TV-7	9	4	0	8	6	0	6	7	1
8	S-2	10	3	2		**		3	1	0
9	TV-8	10	4	0	8	5	0	9	4	0
10	TV-9,10	11	4	0		**		8	6	0
11	TV-11	11	3	0	8	5	0	9	4	0
12	S-3	9	5	0		**		4	2	0
13	TV-12,13	11	4	0		**		6	7	1
14	TV-14,15	9	6	0		**		8	5	0
15	TV-16	11	3	0	6	5	2	7	5	0
16	S-4	7	5	0		**		1	0	0
17	TV-17	8	5	0	6	4	2	3	8	0
18	S-5	4	4	4		**			**	
TOTAL	____	161	67	6	51	36	5	104	65	5

*TV - pretaped video program, S - live, interactive seminar

**No 4-channel or laboratory.

TABLE 13

CLASS RATING FORM SUMMARIZED ACROSS ALL PROGRAMS

Part I -- Televised Programs

Item #	Content	Frequency	Percentage
1	Presentation mode most effective in helping you to understand today's program		
	a) Instructor talking on screen	396	21%
	b) Classroom scenes, instructor describing	669	36%
	c) Instructor explaining charts	92	5%
	d) Teacher working with students	534	29%
	e) Interviews with experts or practitioners	164	9%
2	Presentation mode least effective		
	a) Instructor talking on screen	510	28%
	b) Classroom scenes, instructor describing	225	12%
	c) Instructor explaining charts	439	24%
	d) Teacher working with students	233	13%
	e) Interviews with experts or practitioners	410	23%
3	Presentation more effective if altered		
	a) Less material at greater depth	201	11%
	b) Less material because it was too much to comprehend	162	9%
	c) More material relevant to central issues	181	10%
	e) Coverage was adequate	1297	70%
4	Discussion improved if more time spent on		
	a) Theoretical aspects	52	3%
	b) Procedures for using materials	309	17%
	c) Examples of applications in classroom	466	25%
	d) Adequate mix: theory, procedure and application	1023	55%
5	Programs would be better if less time was devoted to		
	a) Theoretical aspects	371	20%
	b) Procedures for using materials	63	3%
	c) Fewer examples of classroom applications	96	5%
	d) Program was an adequate mix	1293	71%

TABLE 13--CONTINUED

Item #	Content	Frequency	Percentage
6	Which one would make the moderator more acceptable?		
	a) Enunciated more carefully	67	4%
	b) If he understood more of the subject	22	1%
	c) If he talked in a more natural way	297	16%
	d) Acceptable as is	1452	79%
7	Improvement needed to make lecture easier to follow		
	a) More explicit transitions between ideas	81	4%
	b) More careful organization of main points	42	2%
	c) Greater amplification of main points	340	18%
	d) More summary statements	329	18%
	e) Acceptable as is	1060	57%
8	Effect of program on teaching		
	a) Little or no relevance	111	6%
	b) Would like to use it, but probably won't	208	11%
	c) Would like to use it, but don't understand it enough	179	10%
	d) I plan to use it	1017	55%
	e) Something I already know or am using	338	18%
9	More close-ups needed		
	a) Yes	132	7%
	b) No	1693	93%
10	Need more close-ups of charts and written materials		
	a) Yes	580	32%
	b) No	1248	68%
11	Need to hold written material on the screen longer		
	a) Yes	849	46%
	b) No	985	54%

TABLE 13--CONTINUED

Item #	Content	Frequency	Percentage
12	Need to hold written material on less time		
	a) Yes	76	4%
	b) No	1743	96%
13	Pace of the program needs to move		
	a) Slower	378	21%
	b) Faster	125	7%
	c) Acceptable as is	1329	72%
14	Overall evaluation of TV program		
	a) Excellent	300	16%
	b) Very good	740	40%
	c) Good	629	34%
	d) Fair	150	8%
	e) Poor	25	1%
15	Do you have a specific comment		
	a) Yes	215	12%
	b) No	1602	88%

portions of the course, though in looking at the data for individual programs there are some program specific suggestions which could be made.

Of the three instructional activities rated on the Site Coordinator's Checklist (Table 12), site coordinators rated participant satisfaction with the televised programs the highest, with 69% reporting high satisfaction, 29% moderate satisfaction and only 2% indicating low satisfaction. These ratings are in agreement with those made by participants on the Class Rating Form.

Considering the ratings of various aspects of the televised programs included in Table 13, the pace of the programs was rated as acceptable (72% responded this way on item 13). Ratings also indicated that the moderator was acceptable as he was (79% on item 6). Further, the level of coverage of the material was adequate (70% on item 3), and there was thought to be an adequate mix between practical and theoretical information presented in the course (items 4-5). The presentation modes (item 1) thought to be most helpful in conveying information were classroom scenes with the moderator providing a description (36%) and classroom scenes of the teacher working with students with no voice-over moderation (29%). The presentation modes (item 2) that were rated least effective in communicating information were segments with the instructor on the set (28%) and interviews with experts and practitioners (23%). Of course, it must be remembered in items 1-2 that the students could only rate presentation modes that were used in the program being rated and that the presentation modes varied across programs. Thus, the ratings here reflect both the degree of usage of the several modes listed as well as their perceived effectiveness.

Several items on Part I of the CRF dealt with rather technical features of television production. These were items 11-12, dealing with the amount of time written materials were held on the screen; items 9-10, dealing with the number of close-up shots used; and item 7, dealing with the presentation and treatment of main ideas conveyed in the programs. The overall response to all of these items was that the set of televised programs was adequate in all of these respects. Specific suggestions for revision may be obtained from the responses to individual programs.

The final item from Part I of the CRF to be discussed is in some ways the most important. Item 8 asked: "What effect do you think today's program will have on your teaching?"

It is encouraging here that 55% of the participants said the information conveyed in the program was something they planned to use in their classrooms, 18% of the participants were already using it, and only 6% thought that it had little or no relevance to their own teaching. Some comments written by the participants as they filled out Part I of the CRF are included below.

> "I thought the program was good. My only suggestion would be to take notes."
>
> "I felt many important points were lost because they were covered too quickly."
>
> "Please leave the written lists or charts on longer and have them a little bigger. The transmission of the program was fuzzy and some of the video was lost due to the smallness of the wording."
>
> "One point - the program tends to speed through when listing materials or points, which makes the classroom scene sequences seem more tedious in contrast."
>
> "The program was very interesting and reinforced readings. Needed longer or slower presentation of analysis which is harder for me to grasp."

> "I appreciated the exposure to another section of our county school system but was pleased with the examples locally."

> "I felt that the lectures are very good, but I would like to see the important summary statements be put on charts for a longer period of time. At times, the summary statements are presented so quickly and I miss many important facts."

> "Great organization, beautiful presentation, but too fast."

Four-Channel Audio

Part II of the Class Rating Form queried participants about different features of the audio review segments. As shown in Table 14 the overall participant evaluation (item 52) of the four-channel audio review activities was somewhat lower than that for the televised programs, (though the median response of 3.58 was again in "good" to "very good" range. Accordingly, ratings by site coordinators favored this same trend, with 56% reporting high, 39% moderate and 5% reporting low participant satisfaction with this activity. As can be seen in Table 14, the technical features of the four-channel audio reviews--channel changing, volume, static, etc.,--were generally rated as excellent (items 41-45). However, there were problems at specific sites, especially regarding the presence of static or odd noises. Regarding the time allotted for choosing a response and the number of items included each day, participants felt that the interval (item 46) was about right (76%) and that the number of items and the length of the items (item 48) was about right as it was (56%). There was some sentiment in support of increasing the number of items (35% chose a, b, or c on item 48).

TABLE 14

CLASS RATING FORM SUMMARIZED ACROSS ALL OCCASIONS

Part II -- Four-Channel Audio

Item #	Content	Frequency	Percentage
41	Hear nothing when button pushed?		
	a) Yes	143	15%
	b) No	807	85%
42	Was the volume satisfactory?		
	a) Yes	888	93%
	b) No	62	7%
43	Did you ever not get the channel you selected?		
	a) Yes	76	8%
	b) No	871	92%
44	Hear two or more channels at once?		
	a) Yes	128	14%
	b) No	816	86%
45	Hear static or odd noises?		
	a) Yes	222	24%
	b) No	718	76%
46	Time interval for response choice		
	a) Too long	204	22%
	b) Too short	18	2%
	c) About right	723	76%
47	Change to improve relevancy		
	a) Content deal more thoroughly with concepts	35	4%
	b) Content focus more on application	109	11%
	c) Content expanded on relevant concepts	53	6%
	d) Good as is	747	79%

TABLE 14--CONTINUED

Item #	Content	Frequency	Percentage
48	Improve four-channel audio segment		
	a) More but shorter items	146	15%
	b) More items of same length as now	173	18%
	c) More items of greater length than now	22	2%
	d) Enough items, proper length now	525	56%
	e) Problem is not items, but use of audio segment as an instructional medium	80	9%
49	Improve questions		
	a) Shorter	118	12%
	b) Problem more clearly stated	48	5%
	c) Both a & b	90	10%
	d) Satisfactory length and clarity	689	73%
50	Improve alternatives		
	a) Shorter	174	18%
	b) Longer	25	3%
	c) Fewer	29	3%
	d) Good as is	715	76%
51	Improve explanation of answers		
	a) More thorough and same length	41	4%
	b) Briefer, more to the point	173	19%
	c) Longer and more thorough	27	3%
	d) Adequate length and coverage	696	74%
52	Overall evaluation of four-channel audio segment		
	a) Excellent	146	16%
	b) Very good	344	37%
	c) Good	324	34%
	d) Fair	96	10%
	e) Poor	31	3%
53	Specific comments		
	a) Yes	75	8%
	b) No	842	92%

Four items from Part II of the CRF concerned the quality of the four-channel questions. On item 49, 73% of the participants expressed the feeling that the items were satisfactory in regard to length and clarity. The length and number of alternative answers (item 50) were also rated as satisfactory (76%). In terms of the theoretical versus applied orientation of the items, 79% of the participants felt that the items were acceptable as they were. Regarding the length and level of coverage of the explanations of answers included in the four-channel audio review, 74% of the participants felt that the materials were adequate in this respect (item 51).

The comments which follow reflect participants' general likes and dislikes regarding the four-channel audio reviews.

> "I enjoyed the four-channel audio segment and found this segment of the program very interesting."
>
> "There is an improvement in the four-channel over last summer. Changes have been made for the better. The directions are briefer and the questions are shorter and clearer."
>
> "The question and responses do not allow me to answer questions accurately. On many questions, I could not find an adequate response and was forced to choose the one that was the least false."
>
> "The alternatives were so ridiculous that they made the correct answer obvious. The choices would be more challenging if they were partially true and we were asked to choose the best of the four."
>
> "I thought the four-channel segment very interesting and helpful. I wish there would have been more questions to answer."
>
> "In my opinion, the four-channel audio segment is the least helpful of the components of this course--especially for all the time and effort of plugging in, etc. It seems like a lot of 'trouble' just to answer four little questions which, to me, could be more of a learning tool if read by the class leader and discussed among the group--or dispense with those questions altogether and let the class members use this time to discuss things that interest or puzzle them about the lab or lecture."

> "There were overtones in earphones of other answers due to technical problems, and the delay for selecting an answer resulted in a waste of time for me."

> "Four-channel audio was beneficial in that we were able to apply information and were given feedback."

> "I benefited greatly from the four-channel audio segment--I would like the time on this segment to be increased."

> "The alternatives were too closely related and as I listened I could not see a great deal of difference in most of them."

> "I like the four-channel audio segment because it makes you apply what you have gotten in your readings and from the television lectures, but I do feel that there could be more questions given."

Seminars

As presented in Table 15, the median overall rating (3.58) for the seminars (item 89) was in the "good" to "very good" range. It is somewhat lower than the rating for the televised programs.

Participants made several suggestions for improving the seminar format. They expressed a desire (item 81) to keep the length of the seminar at about one hour, but to allow a 15-minute intermission (34%) to give students more time to generate questions. Too, participants suggested that they be given more opportunities to generate questions prior to each seminar program (24%). Additionally, (item 83) participants felt that the seminars would be improved by beginning them with short content summaries (38%) or new illustrations or demonstrations (23%). On item 82, most (62%) of the participants felt that the panel composition for the seminars was fine as it was, but 25% suggested the use of more teachers on the panels.

TABLE 15

CLASS RATING FORM SUMMARIZED ACROSS ALL OCCASIONS

Part III -- Seminars

Item #	Content	Frequency	Percentage
81	Improve effectiveness of seminar by format change		
	a) 1 hr TV seminar and 15 min intermission	219	34%
	b) 2 hr TV seminar and 15 min intermission	26	4%
	c) 1 hr TV seminar and opportunity to generate questions during and 15 min prior to the program	158	24%
	d) 1 hr TV seminar with direct voice hook-up	208	32%
	e) 1 hr conference call	35	5%
82	Improve effectiveness of seminar		
	a) Course instructor only	44	7%
	b) Use more teachers as guests	166	25%
	c) Use more professors and experts as guests	42	6%
	d) Fine as is	405	62%
83	Facilitate the generation of more meaningful questions		
	a) Begin with 10 minute course content summary	245	38%
	b) Begin with 10 minute film of previous programs	67	10%
	c) Begin with short illustration of new demonstrations	151	23%
	d) Use whole seminar for question answering and none for question stimulation	190	29%
84	Increase the value of the answers to the questions		
	a) Less theory	36	6%
	b) More classroom examples	141	21%
	c) More direct answers	157	24%
	d) Satisfied as is	322	49%

TABLE 15--CONTINUED

Item #	Content	Frequency	Percentage
85	Seminar moderator more effective		
	a) Keep guests more on topic	85	15%
	b) Provide occasional summary	318	54%
	c) Allow each guest equal time	53	9%
	d) Keep a faster pace.	129	22%
86	Improve usefulness of guest's presentation		
	a) Not repeating themselves	45	7%
	b) Keep on topic	42	6%
	c) Allow them to express themselves better	30	5%
	d) Relate answer to practical situation	264	40%
	e) Excellent as is	274	42%
87	Expected usefulness of follow-up answer via teletype or VHF		
	a) Yes	545	89%
	b) No	70	11%
88	Advisability of continuing to answer questions via teletype or VHF		
	a) Yes	581	91%
	b) No	56	9%
89	Overall evaluation of seminar		
	a) Excellent	109	17%
	b) Very good	242	37%
	c) Good	176	27%
	d) Fair	97	15%
	e) Poor	34	5%
90	Specific comments		
	a) Yes	109	17%
	b) No	527	83%

The participants felt that the seminar moderator (item 85) could be more effective in providing occasional summaries (54%) and keeping up the pace of the seminar (22%). It was also suggested by some (item 86) that the guests should relate their answers to more practical situations (40%), though 42% of the participants felt that the guests were excellent. Sentiments similar to those expressed toward the seminar guests were expressed in item 84 concerning the relationship between the quality of the seminars and nature of the answers to questions.

A final aspect of the seminar ratings related to the usefulness the transmission via teletype of answers to questions not included during the seminar broadcasts. Participants overwhelmingly (91%) responded (item 88) that this procedure should be continued and (item 87) felt that this was a useful activity (89%).

General suggestions about the seminars are reflected in the following comments made by participants on the CRF.

> "Overall, I feel that this seminar (like the others) was very interesting and enlightening. However, I do feel that some of the answers given were a bit 'idealistic'. (I'm basing my comment on my own experiences in six years of teaching plus those experiences related to me by other teachers.)"
>
> "Too many of the questions were similar. Also, much of the time was spent in answering questions which could be answered if people were reading their assignments. Isn't there some way of cutting out this type of question--or at least answering them without all of the students sitting through it. This simply drags the seminar out too long."
>
> "I feel the seminar guests were often too direct--giving a simple answer to a complicated abstract question. I also feel that many of the questions were not worthwhile--a fault of the students."
>
> "The seminar was interesting and useful! I enjoyed the interaction between guests and moderator. It cleared up a lot of problems for me that I've wondered about."

> "Someone should be screening the questions more carefully so the speakers do not have to keep repeating themselves over and over again."

> "The speakers were not aware of the problems that exist in our area of teaching and therefore could not answer our questions adequately. The questions were not answered directly."

> "Questions relating to material already given by the project, such as simple definitions, should be omitted. You have provided us with the definitions of all the terms used. Your seminar is valuable, but should be screened a little more carefully."

> "I feel that the seminar would be more effective if the teletype machine were not used during this time."

> "Most of us respond enthusiastically to the practical, down-to-earth answers and ideas of the teachers on the panel--or those who obviously work with children."

> "Seminars are too lenghty--hard to sustain interest for full hour. Perhaps have them more often and for shorter periods of time."

> "Guests' answers were not direct enough. They answered more optimistically than with a practical viewpoint. Teachers know they need to organize, but how? Guests need to have more practical suggestions for teachers who have no aides and few local resources."

Laboratory Activities

In terms of participant satisfaction with the instructional activities, the laboratory activities were rated below the TV programs and above the four-channel audio reviews, according to reports by site coordinators on the SCC. Reports of high, moderate and low participant satisfaction with the labs were 60%, 37% and 3% respectively. Table 16 presents participant ratings from the Class Rating Form. As can be seen from the table, the median overall rating (3.36) of the lab activities was "good" (item 132). In regard to more specific questions, when asked whether the activities were related to the topic (item 125), whether the

TABLE 16

CLASS RATING FORM SUMMARIZED ACROSS ALL OCCASIONS

Part IV -- Laboratory Activities

Item #	Content	Frequency	Percentage
121	Use of materials from reference shelf		
	a) Not enough time	79	6%
	b) No need	823	63%
	c) Used the materials a little	249	19%
	d) Used the materials quite a bit	158	12%
122	Amount of time spent working in lab		
	a) 30 minutes or less	249	19%
	b) 45 minutes	253	19%
	c) 60 minutes	336	26%
	d) 90 minutes	320	24%
	e) 2 hours or more	151	12%
123	Improve lab by		
	a) Covering more material	89	7%
	b) Covering less material	252	19%
	c) Lab was OK	971	74%
124	Clearer instructions are needed		
	a) Yes	231	18%
	b) No	1059	82%
125	Selected lab activities more related to today's topic		
	a) Yes	112	9%
	b) OK as is	1172	91%
126	Need more time		
	a) Yes	209	16%
	b) OK as is	1091	84%
127	Make activities more applied and practical		
	a) Yes	172	13%
	b) OK as is	1127	87%

TABLE 16--CONTINUED

Item #	Content	Frequency	Percentage
128	Require less material to be read prior to class		
	a) Yes	438	34%
	b) OK as is	858	66%
129	Require more relevant prior readings		
	a) Yes	108	9%
	b) OK as is	1112	91%
130	Need more relevant materials on shelf		
	a) Yes	191	16%
	b) Adequate as is	1020	84%
131	Needed more useful homework assigned last week		
	a) Yes	141	11%
	b) Useful as was	1091	89%
132	Overall evaluation		
	a) Excellent	134	11%
	b) Very good	415	33%
	c) Good	550	44%
	d) Fair	121	10%
	e) Poor	31	2%
133	Any especially creative activities		
	a) Yes	283	23%
	b) No	955	77%
134	Specific comments		
	a) Yes	71	6%
	b) No	1140	94%

balance between practical and theoretical content was appropriate (item 127), participants overwhelmingly responded in the affirmative. In response to item 130, 84% of the participants indicated that there were sufficient materials on the reference shelf; however, in item 121, 63% of the respondents indicated (across occasions) that there was no need to use these materials.

A number of specific features of the lab were included on this part of the Class Rating Form. The median time spent working on the lab materials (item 122) was about one hour per class meeting, and 84% of the participants indicated (item 126) that this amount of time was sufficient. In item 123 the labs were felt (74%) to include an appropriate level of material coverage. The amount of reading to be completed prior to class (item 128-129) was thought to be appropriate or perhaps (34% on item 128) a little too heavy, and the homework assigned after each class meeting (item 131) was thought to be useful by 89% of the participants.

Participant comments regarding the laboratory sessions were as follows.

> "I feel that it would be more beneficial if we could spend more time during our 'labs' completing assignments on site--then if (and when) problems arise, we can get immediate feedback, which I feel would be more beneficial."
>
> "I find the lab very confusing. I feel a need for more specific directions especially in receiving the materials."
>
> "I feel the ancillary packet is the best part of the course--seems to be very well planned and coordinated and we certainly do appreciate the amount of thought that has gone into gathering all the needed information so that we don't have to search frantically for all sorts of things--it's organized clearly and I appreciate its being basically 'self-contained'."
>
> "Having to share one set of materials is difficult."

> "There is too much material for length of time allotted. I believe more lab time would result in less confusion."
>
> "The lab is very helpful for individualized reading."
>
> "There was really too much time provided for what activity we had to do."
>
> "I am getting many ideas from the course. I don't mind the readings and generalization sheets, but after working all day at school, I feel that we are asked to do too much outside work. I have a graduate degree and have taken courses in other states. This course has more outside work than any of the other semester courses I've taken."
>
> "It is hard to randomly sit down with someone and begin activities, especially when left to find our own groups (which wasn't true of today's lab). However, I would rather do some of these things with another person, if they are relevant and helpful (which is true of today's lab)."
>
> "The material covered is too much to do a good job with for the length of time that I can spend working on it."

- How reliable was the equipment used in conducting the course?

Three equipment systems were used to transmit the learning activities of the course. These were: 1) the audio-video delivery system; 2) the VHF-teletype relay system; and 3) the four-channel audio review equipment system. These systems are depicted in Figures 2, 3 and 4, which follow, and are described in detail in Technical Report #5 (Bramble, Ausness and Freeman, 1975).

As illustrated in the aforementioned figures, each of the three delivery systems was dependent on the use of either one or both of the ATS satellites for transmission of the various course learning activities. The pretaped video programs and the four-channel audio reviews were broadcast via the audio-video delivery system, which utilized ATS-6. The live seminars were also broadcast via ATS-6; however, questions to the seminar

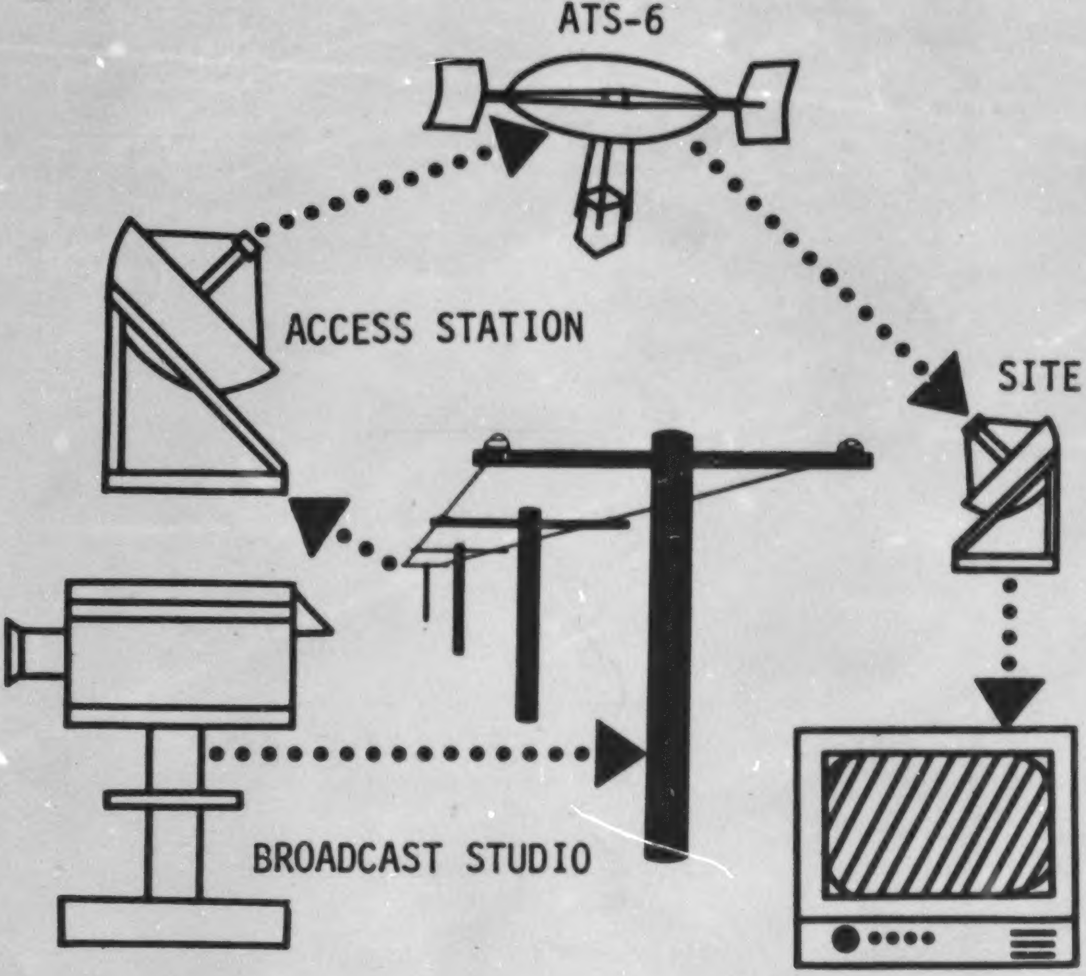

ATS-6
ACCESS STATION
SITE
BROADCAST STUDIO

FIG. 2 -- AUDIO-VIDEO DELIVERY SYSTEM

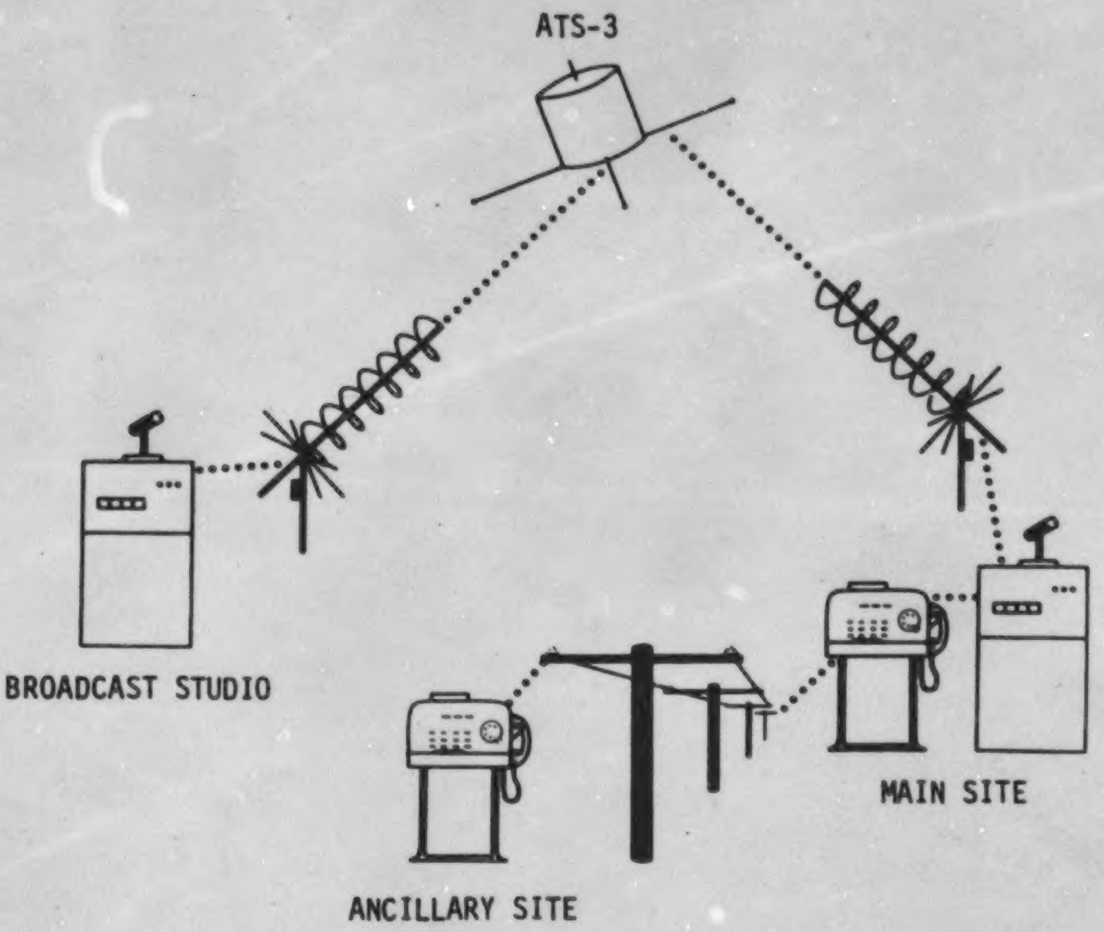

ATS-3
BROADCAST STUDIO
MAIN SITE
ANCILLARY SITE

FIG. 3 -- VHF-TELETYPE RELAY SYSTEM

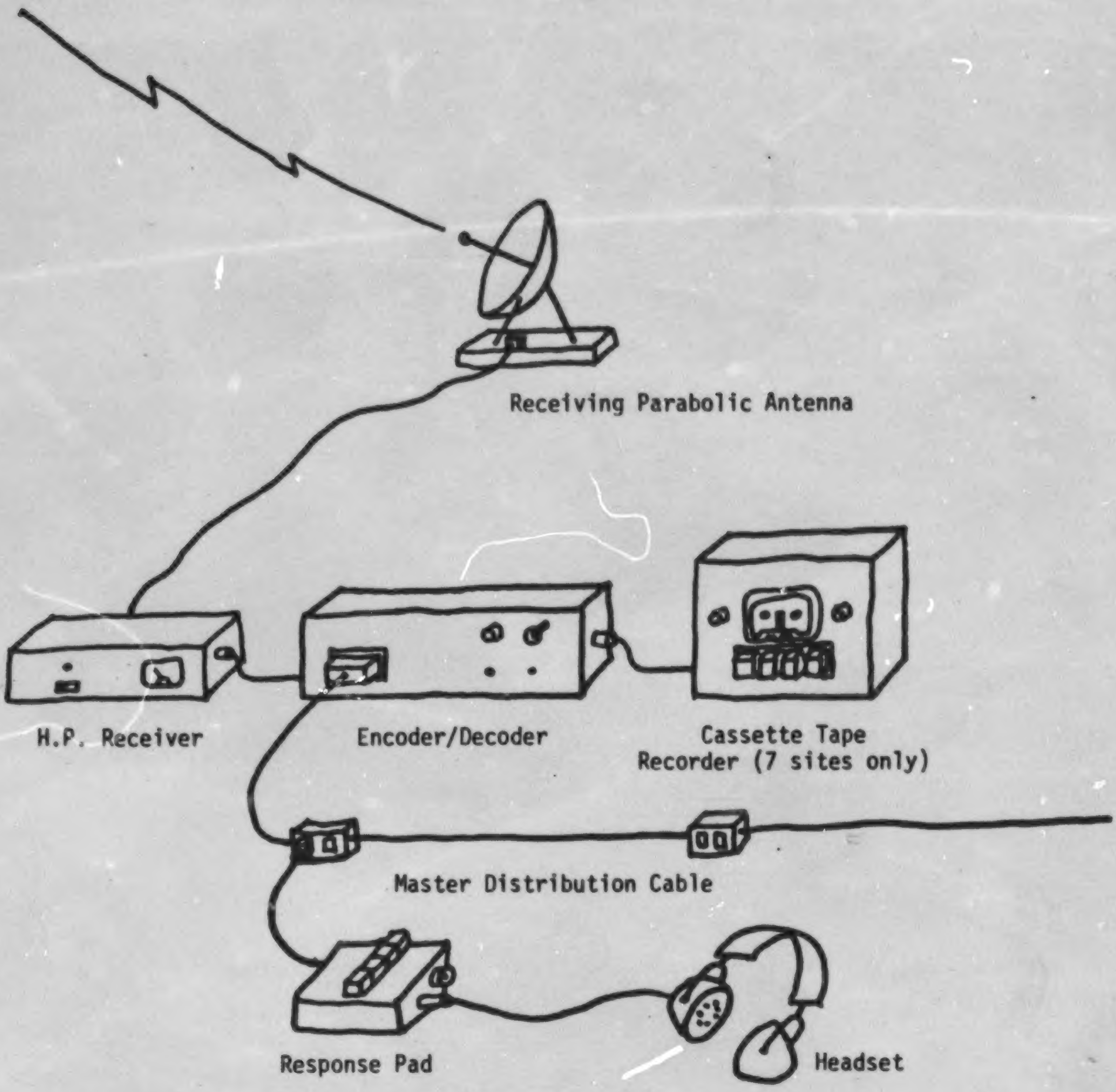

Receiving Parabolic Antenna
H.P. Receiver
Encoder/Decoder
Cassette Tape
Recorder (7 sites only)
Master Distribution Cable
Response Pad
Headset

FIG. 4 -- FOUR-CHANNEL AUDIO REVIEW EQUIPMENT AT CLASSROOM SITES

panel were transmitted from the sites via the VHF-teletype relay system, which utilized ATS-3.

To gather information regarding the quality of reception and equipment reliability, the site coordinators were asked to complete the Site Coordinator's Checklist (SCC) after each class session (a copy of this instrument is presented in Appendix 1). The quality of reception ratings from the SCC are summarized in Table 17. As shown in the table, signal quality was either excellent or contained only minor distortion for 97.7% of the TV audio and 99.6% of the TV video transmissions. Too, the VHF radio transmissions were excellent or contained minor distortion 94.0% of the time. These ratings indicate excellent reported reception. These percentages are based on the total number of ratings received each session, rather than on the total number of broadcasts received at each site.

Specific equipment problems reported on the SCC are detailed in Table 18. As may be seen, the greatest number of problems was experienced with the teletype machine, which had a reliability of 88.6%. The TV reception equipment had the highest reliability, 96.8%, with problems being reported only 3.2% of the time. Reliabilities for the VHF and the four-channel equipment were 91.8% and 96.2%, respectively. Some miscellaneous problems related to equipment and other shortcomings of the course are detailed in Table 19.

The reliability and reception quality for this course were the best experienced for all four courses offered by the AESP. From this it appears that most of the "bugs" in the system have been worked out. This high level of equipment performance is necessary if satellite transmission of educational programs is to become commonplace.

TABLE 17

QUALITY OF RECEPTION FROM SITE COORDINATOR'S CHECKLIST SUMMED ACROSS SITES AND SESSIONS

System	none	poor	major distortion	minor distortion	excellent	no response
Audio Signal						
TV audio (ATS-6)	2(.9%)	0(0%)	3(1.4%)	29(13.3%)	184(84.4%)	37
VHF (ATS-3)	1(1.2%)	0(0%)	4(4.8%)	7(8.3%)	72(85.7%)	1
4-channel audio	0(0%)	1(1.1%)	3(3.4%)	7(8.0%)	76(87.4%)	18
Video Signal						
TV picture (ATS-6)	0(0%)	0(0%)	1(.4%)	26(11.1%)	208(88.5%)	20

Note: Percentages based on frequency responding. Total possible is based on number of programs times number of sites; TV audio and TV picture: 17 programs times 15 sites equals 255; VHF: 17 programs times 5 sites equals 85; 4-channel: 7 programs times 15 sites equals 105.

TABLE 18

EQUIPMENT PROBLEMS FROM SITE COORDINATOR'S CHECKLIST SUMMED ACROSS SITES AND SESSIONS (BASED ON 99% RESPONSE RATE FROM SITE COORDINATORS)

Equipment	Frequency of Problems	Percentage of Problems
TV reception equipment		
Parabolic antenna	1	.4%
2.6 GHz receiver	4	1.6%
TV monitor/receiver	3	1.2%
VHF reception equipment		
Helical antenna	3	3.5%
VHF console	4	4.7%
Teletype equipment		
Machine	20	7.8%
Teletype line	6	2.4%
EIA interface (teletype to ATS-3)	3	1.2%
4-channel equipment	4*	3.8%
Connections and/or interconnecting cables	2	.8%

Note: Percentages based on actual number of problems divided number of possible uses of equipment. All equipment could be used at least 255 times (17 programs times 15 sites) except for VHF equipment (85 times, 17 programs times 5 sites) and 4-channel (105 times, 7 programs times 15 sites).

*One problem with the master audio unit and three problems with the cassette tape recorder.

TABLE 19

SUMMARY OF MISCELLANEOUS PROBLEMS FROM SITE COORDINATOR'S CHECKLIST

Nature of Problem	Session (number of sites reporting)
Delay in program broadcast*	7(8), 12(3), 14(1), 15(2), 16(1)
Low attendance**	5(1), 6(2), 10(1), 11(2), 15(1)
Cancellation or postponement of class***	4(3), 5(1)
Missing laboratory materials****	5(1), 6(1), 7(3), 8(1)
Missing evaluation materials*****	3(1)

*Due to problems at Rosman uplink station for session 7, or due to weak reception problems (loose connections, etc.)

**Reasons given either weather, illness or ball games

***Reasons given were 1) weather and 2) loss of audio signal

****Problems were 1) insufficient copies of one text book, 2) missing a cassette tape for the miscue analysis, 3) missing lost section of laboratory assignment (3 sites) and 4) insufficient copies of laboratory assignments

*****Problem was insufficient copies of class rating form

- How valuable were the information systems that were available to the course participants?

To gather information regarding the above question, the DPRI Information Systems Questionnaire (ISQ) was administered to the participants on the last day of class. The ISQ had two parts: Part I consisted of ten Likert type statements, and Part II consisted of 22 multiple-choice questions (a copy of the ISQ is presented in Appendix 1).

Part I contained five items that related to the usefulness of the Select-Ed information system and five items that related to the Kentucky information system. These ten items were factor analyzed and two factors (eigen values greater than 1.0) were found. The VARIMAX rotated factor matrix is presented in Table 20. Items were assigned to a factor based on the largest loading for each item. The items included on each factor, the factor names, and the factor means are presented in Table 21.

As shown in Table 21, the factor mean (per item) was 3.80; this indicates that the manuals and request forms were adequate and clearly written and that if available, participants would use these information systems. The mean of factor 2 was 3.40. This is a somewhat positive rating but is a little less strong than the rating for factor 1. This indicates that the participants were moderately positive toward the value of the information provided in the searches and that the searches were easy to interpret.

Part II of the ISQ consisted of 22 multiple-choice items. In Table 22 are presented the frequency and percentage of responses to the alternative choices for each item. This information indicates that the

TABLE 20

FACTOR ANALYSIS OF LIKERT ITEMS ON DPRI INFORMATION SYSTEMS QUESTIONNAIRE (N=107)

Question	VARIMAX Rotated Factor Matrix		Mean**	sd
	Factor 1 (87.6%*)	Factor 2 (12.4%*)		
1	.686	.464	3.71	1.16
2	.686	.443	3.68	1.22
3	.246	.699	3.37	1.19
4	.311	.680	3.47	1.08
5	.801	.219	3.97	1.17
6	.725	.274	3.78	1.05
7	.716	.455	3.76	1.09
8	.261	.840	3.34	1.13
9	.474	.663	3.41	1.02
10	.757	.256	3.88	1.21

*Percentage of common variance

**5-point Likert scale -- 5 = strongly agree, 1 = strongly disagree

TABLE 21

FACTOR MEANS FOR LIKERT ITEMS ON DPRI INFORMATION SYSTEMS QUESTIONNAIRE (N=107)

	Factor Name	Items Included on Factor	Factor Mean (sd)
1	The manual and request forms were adequate and clear, and I would use the information systems if they were available to me.	1, 2, 5-7, 10	3.80 (.47)
2	The information searches provided me with useful information and were easy to interpret.	3, 4, 8, 9	3.40 (.55)

participants did not make much use of the information systems except as specificially required to do as part of the course requirements. Only 16% used the Select-Ed system more than the one required time, and only 37% used the Kentucky System at all (items 11 and 12). The participants were allowed to use the information systems as much as they desired to gather information they could use in their reading classes. However, only about half the participants reported being aware of this opportunity (items 26 and 27), and only 58% reported that their site coordinator encouraged them to use the systems more (item 28). This helps explain the low usage rate and points toward a need for more emphasis to be placed on encouraging site coordinators to familiarize themselves with such systems so that they can aid and encourage participants to use them.

Questions 13 through 25 on the ISQ attempted to find reasons for the low usage rate and to identify suggested improvements for information systems usage in the future. Generally, the participants felt that the

TABLE 22

FREQUENCIES AND PERCENTAGES FROM DPRI INFORMATION SYSTEMS QUESTIONNAIRE

<table>
<tr><th>Item</th><th>Response</th><th>Frequency</th><th>Percentage</th><th>N</th></tr>
<tr><td>11.</td><td>1.</td><td>227</td><td>84%</td><td></td></tr>
<tr><td></td><td>2.</td><td>26</td><td>10%</td><td></td></tr>
<tr><td></td><td>3.</td><td>5</td><td>2%</td><td></td></tr>
<tr><td></td><td>4.</td><td>7</td><td>3%</td><td></td></tr>
<tr><td></td><td>5.</td><td>4</td><td>1%</td><td>269</td></tr>
<tr><td>12.</td><td>1.</td><td>162</td><td>64%</td><td></td></tr>
<tr><td></td><td>2.</td><td>78</td><td>31%</td><td></td></tr>
<tr><td></td><td>3.</td><td>9</td><td>4%</td><td></td></tr>
<tr><td></td><td>4.</td><td>3</td><td>1%</td><td></td></tr>
<tr><td></td><td>5.</td><td>3</td><td>1%</td><td>255</td></tr>
<tr><td colspan="5">Items 13 through 15 were answered by participants who did not run more than one assigned search using the Select-Ed system and are concerned with their reasons for not doing so.</td></tr>
<tr><td>13.</td><td>1.</td><td>92</td><td>43%</td><td></td></tr>
<tr><td></td><td>2.</td><td>121</td><td>57%</td><td>213</td></tr>
<tr><td>14.</td><td>1.</td><td>27</td><td>13%</td><td></td></tr>
<tr><td></td><td>2.</td><td>173</td><td>86%</td><td>200</td></tr>
<tr><td>15.</td><td>1.</td><td>26</td><td>13%</td><td></td></tr>
<tr><td></td><td>2.</td><td>173</td><td>87%</td><td>199</td></tr>
<tr><td colspan="5">Items 15 through 18 were answered by participants who did not run any searches using the Kentucky System and are concerned with their reasons for not doing so.</td></tr>
<tr><td>16.</td><td>1.</td><td>79</td><td>52%</td><td></td></tr>
<tr><td></td><td>2.</td><td>72</td><td>48%</td><td>151</td></tr>
<tr><td>17.</td><td>1.</td><td>29</td><td>19%</td><td></td></tr>
<tr><td></td><td>2.</td><td>121</td><td>81%</td><td>150</td></tr>
<tr><td>18.</td><td>1.</td><td>17</td><td>11%</td><td></td></tr>
<tr><td></td><td>2.</td><td>134</td><td>89%</td><td>151</td></tr>
</table>

TABLE 22--CONTINUED

Item	Response	Frequency	Percentage	N
Items 19 through 22 were answered yes if the participant thought the suggested improvement would be of benefit, and answered no if he thought it would not.				
19.	1.	82	34%	
	2.	161	66%	243
20.	1.	82	34%	
	2.	159	66%	244
21.	1.	112	47%	
	2.	128	53%	240
22.	1.	126	52%	
	2.	115	48%	241
Items 23 through 32 asked the participants to respond to a variety of questions regarding information system utilization. "Would you have utilized..."				
23.	1.	210	84%	
	2.	41	16%	251
24.	1.	232	91%	
	2.	24	9%	256
25.	1.	190	74%	
	2.	66	26%	256
"Did you know..."				
26.	1.	148	58%	
	2.	106	42%	254
27.	1.	114	47%	
	2.	129	53%	243
28.	1.	144	58%	
	2.	105	42%	249

TABLE 22--CONTINUED

Item	Response	Frequency	Percentage	N
"Did you incorporate..."				
29.	1.	89	38%	
	2.	148	62%	237
30.	1.	58	27%	
	2.	154	73%	212
31.	1.	108	46%	
	2.	125	54%	233
32.	1.	31	25%	
	2.	31	25%	
	3.	13	10%	
	4.	6	5%	
	5.	45	36%	126

manuals and procedures for running searches were adequate (items 14, 17, 19 and 20). However, the majority felt that further training for the site coordinator and an improved video program devoted to the usage of the information systems would be helpful (items 21 and 22).

A major problem appeared to be that since the information systems provided only references rather than the actual materials, the participants were reluctant to use them. Although this was not reflected in the responses to the two items that specifically ask that question (items 15 and 18), 70% to 90% of the participants reported that they would use the systems more if the materials recommended by the searches were immediately available at some convenient place (items 23, 24, 25 and item 32).

That the information systems were valuable is reflected in the fact that half the participants looked up the materials suggested in the searches they ran (item 31), and about a third used these materials in their classes (items 29 and 30). With more training for the site coordinator, an improved video program explaining information system usage, and easy access to recommended materials, the usage rate of information systems might be increased.

- What was the overall rating of the course?

The answer to this question was obtained from the participant and site coordinator responses on the Summative Comments Form. On Part II of this form, 246 of the participants rated ten features of the course. Means and standard deviations for these ratings (on an eight-point Likert scale with one being highest are presented in Table 23. The means range from a high of 2.086 for the performance of the site coordinator to a low of 4.043 (slightly above neutral) for the interactive seminars. Features of the course receiving the highest ratings were the performance of the site coordinator, the taped TV programs, the seminar host and guests, the follow-up activities, and the on-site reference materials. All mean ratings were on the positive end of the scale, but features least liked were the interactive seminars, laboratory activities, four-channel audio, information systems and preprogram preparation.

Illustrative comments from the course participants shed some light on the interpretation of these ratings. For example, regarding the participant's very positive ratings of site coordinators the following comments were received:

> "Had good organization, knowledge, control of system and gave attention to all students."

TABLE 23

MEANS AND STANDARD DEVIATIONS FOR SUMMATIVE COMMENTS FORM, PART II (PARTICIPANT RATINGS)

Items	Mean	sd	N
1. Preprogram preparation	3.142	1.584	254
2. TV program	2.850	1.749	254
3. Four-channel audio	3.219	2.197	260
4. Laboratory activities	3.529	1.796	257
5. On-site reference materials	3.016	1.681	253
6. Televised, interactive seminars	4.043	2.244	257
7. The seminar host or guests	2.930	1.599	257
8. Information retrieval systems	3.165	1.798	237
9. Follow-up activities	2.964	1.607	253
10. The site coordinator	2.086	1.381	256

8-point Likert scale -- 1 = outstanding, 8 = unacceptable

> "The site coordinator is to be commended for keeping the class organized and focusing on the specific purposes designed for the course."
>
> "He (the site coordinator) initiated good discussions and created an informal atmosphere in the classroom which made everyone work better together. I feel that because of this feeling in the classroom, everyone really enjoyed the course."
>
> "With this type of planned, programmed class, the site coordinator is not given a chance to be a leader. There is not much 'programmed' for the site coordinator to do."

Other valuable comments were received from the participants about the course features that received low ratings. For example, the students complained that the main weakness of the seminars was that they were not practical enough and that the guests often spoke in terms of theory rather than practice.

> "They (the seminar panelists) were idealistic and gave no guidance for the classroom."

On the other hand, participants did appreciate the presence of "experts" to discuss certain topics covered in the course.

Regarding the lab activities, except for activities involving group interaction, participants thought the activities would have been more meaningful if completed at home.

> "Usually the work was done before class. I enjoyed our class discussions and sharing of activities."
>
> "It was interesting to hear the other teachers' ideas."
>
> "Not enough activity in class--need more interaction among participants."

The four-channel audio instruction received mixed reviews. The following participant comments illustrate the differing perceptions of this activity.

> "Very good method of check-up quiz."
>
> "The four-channel audio was very informative and very useful. I loved it!"
>
> "The four-channel audio was a waste of time. Our equipment usually didn't work."
>
> "Some choices were rather ridiculous, making the correct answer obvious."
>
> "It should have been longer. I liked the basic idea of teach and reinforce, but it could be expanded to be more useful."

Comments about the information retrieval systems stressed that the length of turn-around time was too long. Participants were apparently too unfamiliar with the nature of the information available to make useful judgments about its value. Regarding the on-site reference libraries, participants commented that the ready availability of the materials was nice, but that some materials were not needed and conversely some needed materials were in short supply. This indicates that more specific information on materials usage is needed if meaningful changes are to be made in this area.

The site coordinators also rated the first nine features of the course on Part II of the Summative Comments Form. The means and standard deviations for these ratings are given in Table 24. However, due to the limited sample size, the means in this table are much less precise than the means in Table 23. The site coordinators rated the TV programs, seminar host and guests, preprogram preparation, on-site reference materials, follow-up activities and the lab activities as the most positive features of the course. The seminars, four-channel audio instruction and the information retrieval systems were rated poorest. Thus, the site coordinator ratings of course features are not unlike the participant ratings of these same features. Too, comments from the site coordinators generally paralleled those of the course participants. However, the site coordinators were more concerned with difficulties of an organizational or scheduling nature and with problems of understanding instructions for lab activities and the use of the information systems.

The first item on Part I of the Summative Comments Form allowed the participants to identify specific television programs that they liked or disliked. The frequencies with which programs were mentioned are given in

TABLE 24

SITE COORDINATOR RESPONSES ON THE SUMMATIVE COMMENTS FORM

Item	Topic of Rating	Mean	sd	N
1	Preprogram Preparation	2.29	2.14	7
2	TV Program	1.75	.71	8
3	Four-Channel Audio	4.75	1.67	8
4	Laboratory Activities	2.88	2.36	8
5	On-Site Reference Materials	2.33	1.00	9
6	Seminars	4.25	2.71	8
7	Seminar Host and Guests	2.00	.87	9
8	Information Retrieval Systems	4.89	2.26	9
9	Follow-up Activities	2.33	1.87	9

in Table 25. As shown in the table, the most liked programs were 7 (Prescriptive Instructional Systems), 16 (Developing Life-Long Readers), 2 (Informal Tests), 14 (Comprehension), 3 (Standardized Tests) and 15 (Reading in the Content Fields). In interpreting these findings, the most important factor that each of these programs had in common concerned the content or topic. The content of each of these programs was fairly familiar to teachers and concerned tests and teaching practices they had had some experience in implementing. Too, the presentation mode in each of these programs was similar--a considerable amount of classroom filming with voice/over explaining the use of these techniques. In contrast, the least liked program was disliked for several reasons: it tried to cover too much complex information about administering, scoring and interpreting the

TABLE 25

PARTICIPANT RESPONSES ON SUMMATIVE REPORT FORM

Part I -- Item 1: Participant Ratings of TV Programs

Program	Frequency Liked	Frequency Disliked
1. DPRI introduction	0	0
2. Informal tests	19	0
3. Standardized tests	15	1
4. Word recognition tests	5	0
5. Comprehension and study skills test	3	0
6. Miscue analysis	10	39
7. Prescriptive and instructional systems	33	0
8. DPRI management	9	1
9. Reading readiness and beginning reading	13	1
10. The exceptional reader	6	1
11. Word recognition	11	0
12. Vocabulary	16	0
13. Study skills	10	1
14. Comprehension	17	0
15. Reading in the content fields	14	0
16. Developing life-long readers	22	0
17. Total reading program	1	1

Reading Miscue Inventory, something which most participants had had no experience with or did not previously understand. The teachers felt that this instrument was too complicated to use in their classrooms anyway and that if the course was to cover this topic, participants felt there should have been at least two programs devoted to Miscue Analysis.

Item two, on Part I of the SCF gave the participants an opportunity to suggest particular revisions which might lead to improvements in the programs. These suggestions are summarized in the results section in the participant comments about the TV programs. In general, participants felt that the pace of most programs was too fast for the amount of material covered. They suggested that more content summaries be included so that important concepts received the proper stress.

Participants were asked in item three if they would recommend this course to their peers. Of the 246 respondents, 238 said they would while only 8 said they would not. This indicates that the overall course rating was positive. In item four, the participants were asked to make specific recommendations for the overall improvement of the course. The following comments are representative of those received.

> "I wish there was some way we could develop in depth each concept which has been presented. Too much was offered."
>
> "More specific activities for teaching skills; more detail of reading programs - (ITA, DISTAR)."
>
> "Seminars tend to become boring when students have to listen to answers to everyone else's question that do not apply to them. It would probably be more practical to send back answers to questions through teletype only."
>
> "Less material should be given. I felt that I was lost with so many different materials."

"I think the course had too much 'busy' work. I would have gotten more out of the course by discussing all these activities without writing them down. We are professionals and should be treated as such."

"The course covered a lot of material. I think it would be nice if you could now take single or paired programs and elaborate on them--management, exceptional learners, word attack skills, etc."

"I feel that many of the ancillary activities could be done on our own time."

"We could use more live seminars and group interaction."

"I felt during the lab sessions teachers shared ideas and materials that worked for them. This worked excellently at our site."

CONCLUSIONS

The DPRI-6 Course, the fourth course offered by the AESP, was an effort to coordinate and perfect the standard features common to all AESP courses. In addition, this course was somewhat of an experiment in that it offered students three course content options from which to choose, making this course more flexible, yet at the same time more tailored and content specific than previous courses.

Based on the information presented in the results section, the site coordinator and participant evaluations of this course lead to the following conclusions:

> The particular course option chosen by the participant did not affect pre-to-post achievement gain. As was the case in the past, significant pre-post differences on the achievement variable were due to factors at individual sites. However, the postcourse achievement scores revealed no significant differences attributable to either triangles or sites.
>
> The postcourse achievement mean of over 70% was quite high. From this it can be inferred that participants mastered the course materials.

There was a small (non-significant) mean gain in attitude as a result of this course. However, since the precourse means were very positive, an insignificant gain in attitude is understandable.

The ratings of the ten course features were similar to those of previous AESP courses. All ratings were positive, but there was a definite preference for certain activities. As in the past, the features most liked were the taped TV programs, the site coordinator, the on-site reference materials, and the seminar host and guests. There was also agreement with ratings for the other courses on the least liked activities: the four-channel audio reviews, the seminars and the information systems. The labs and the preprogram activities were rated more positively by site coordinators than by participants.

The data suggest that the best liked television programs were those which contained a balance of theory and practice. The programs which were too abstract or covered too much material were disliked by participants.

Although participants seemed to understand that the site coordinator's role was not that of instructor, their comments suggest that site coordinators need more training as facilitators. It was mentioned frequently that the site coordinator should be well versed in the utilization of information retrieval systems so that he or she could encourage the use of these systems. Too, the site coordinators should take a more activite role in insuring that labs are organized, that students know what they have to do, and that the activities run smoothly.

Even though the seminars were not rated as highly as the taped programs, participants thought that the idea of an interactive seminar was, in itself, valuable. However, participants did not feel that the project made optimal use of its seminar time. They thought that a more efficient system for the relay of questions and a better process for screening questions were needed. Too, they suggested that the seminar moderator take a more active role in guiding the discussions.

The sharing of ideas and experiences provided for in the laboratory sessions was thought to be one of the most valuable aspects of the course experience. It seems that for future courses, the lab sessions should be less "programmed" and the workload more evenly distributed so as to maximize opportunities for in-class interaction. Participants valued the field work completed as part of their follow-up work and suggested that more activities of an applied nature should be incorporated into the course.

Participants felt that the information obtained from the information retrieval systems was valuable. They suggested that with more training for the site coordinator, an improved video program and easy access to recommended materials, the usage rate of the information systems could be increased.

Regarding the equipment, the reported quality of reception and equipment reliability was excellent, better than in the previous three courses. This high level of equipment performance is essential to the acceptance of education by satellite.

The participants considered the overall course experience valuable. They would take it again, knowing what they now know about the course.

APPENDIX 1

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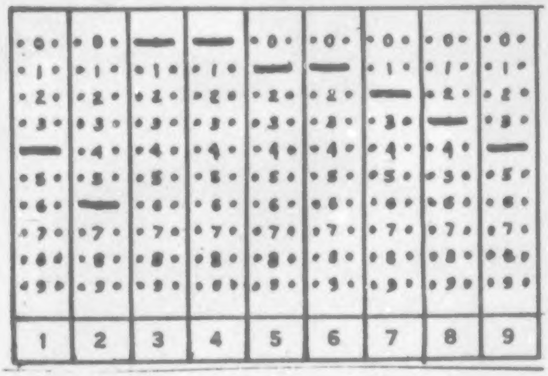
Appalachian Education Satellite Project
Resource Coordinating Center
306 Frazee Hall, University of Kentucky
Lexington, Kentucky 40506

COMBINED ATTITUDE AND BACKGROUND QUESTIONNAIRE

This questionnaire is divided into 2 parts. The first part is concerned with your attitudes towards reading, and the second part asks for some background information. Please answer as truthfully as possible. Your answers do not affect your grade in the course, but help us to assess the effectiveness of the course and suggest improvements.

Be sure you have a pink Op-Scan form titled "General Coding Form". Write your name on the upper left hand corner of the form. Fill out columns 1 through 9 as indicated by the diagram.

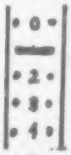


in column 1 place a 4 if K-3
5 if 4-6
6 if K-6

in column 2-5 fill in 6001

in column 6-9 fill in YOUR four digit student number

Start your answers in column 31. Use a soft-lead (#2) pencil to mark the answer sheet -- do not use a pen or ball-point. Connect with a heavy line the 2 dots between which your response number lies: . If you change your mind or make a mistake, be sure that you erase completely. Do not make any other marks on the answer sheet.



For each statement in the first part mark

1 if you COMPLETELY DISAGREE with the statement

2 if you MOSTLY DISAGREE with the statement

3 if you MODERATELY DISAGREE with the statement

4 if you SLIGHTLY DISAGREE with the statement

5 if you SLIGHTLY AGREE with the statement

6 if you MODERATELY AGREE with the statement

7 if you MOSTLY AGREE with the statement

8 if you COMPLETELY AGREE with the statement

Note: The first alternative in the Op-Scan sheet is '0'. Be careful not to mark '0' if you mean to mark '1'.

The second part of the questionnaire asks for background information. The information obtained is potentially very helpful in conducting the course and in evaluating its usefulness. Please answer all questions on the form unless a question does not apply or if you cannot remember the information asked for. This information is kept confidential.

31. Reading instruction should focus more on reconstructing meaning from the written page than pronouncing words.

32. One responsibility of the primary reading teacher is to expose students to different kinds of experiences.

33. An analysis of oral reading miscues is more trouble than it's worth.

34. Reading should be integrated with all other classroom activities.

35. Contingency contracting is a method that lets children "goof off" and not make good use of their time in school.

36. There's nothing a teacher can do to develop reading readiness in students.

37. Information systems linking diagnosis and instruction are effective ways to plan instructional activities.

38. Vocabulary should be taught through real life experiences.

39. Grouping children on the basis of common skill needs is better than grouping them on the basis of instructional level.

40. Students in your class should all read the same thing, so no one feels bad.

41. Teachers only need to diagnose student needs in the fall of the year.

42. The emphasis given phonics changes according to student needs.

43. Diagnosing student reading problems is the responsibility of the teacher, rather than the school administration.

44. Informal tests are better than standardized tests for placing students at appropriate levels.

45. Prescriptive instruction is the best way to teach reading.

46. A child should read all the way through every book she takes out of the library.

47. Kindergarten teachers do not have to worry about teaching students to understand stories.

48. If a class is large, there's no way to work with individuals.

49. A third-grade teacher only needs third-grade instructional materials.

50. Knowing how to understand a graph or table is an aspect of social studies and NOT an aspect of reading instruction.

51. A student is a good reader if he can read every word correctly.

52. Not using every page in the workbook is wasteful.

53. Scores on standardized tests provide adequate information for instruction.

54. If a child is not interested in reading, there is little a teacher can do to generate enthusiasm.

55. Time spent diagnosing could be better spent instructing.

56. If you don't have enough books for all your students, you cannot effectively use a set of materials.

57. There is so much material to cover in school that taking time to let children do "free reading" is not productive.

58. Sex

    1. Male
    2. Female

59. Description of community in which you teach (or work in some other area of education)

    1. Rural
    2. Suburban
    3. Urban

60. Age in years as of last birthday

    1. 21-23
    2. 24-26
    3. 27-30
    4. 31-40
    5. 41-50
    6. 51-60
    7. 61 or over

61. Score on GRE Verbal (leave blank if you have not taken it or do not remember score)

   1. 400 or below
   2. 401-450
   3. 451-500
   4. 501-550
   5. 551-600
   6. 601-700
   7. 701 or above

62. Score on GRE Quantitative (leave blank if you have not taken it or do not remember score)

   1. 400 or below
   2. 401-450
   3. 451-500
   4. 501-550
   5. 551-600
   6. 601-700
   7. 701 or above

63. Position during 1974-75 academic year

   1. Classroom Teacher
   2. Reading Specialist
   3. Special Education Teacher
   4. Counselor
   5. Principal
   6. School Administrative Position (other than principal)
   7. Other

64. Choose the grade range that closely approximates the grades you work with

   1. Elementary - all grades
   2. K
   3. 1
   4. 2
   5. 3
   6. 4
   7. 5
   8. 6
   9. 7-12

65. Work experience in teaching

   1. 1 year or less
   2. 2-3 years
   3. 4-5 years
   4. 6-8 years
   5. 9-10 years
   6. 11-15 years
   7. 16-20 years
   8. 21 years or more

66. Experience as a Reading Specialist

1. none
2. 1 year or less
3. 2-3 years
4. 4-5 years
5. 6-7 years
6. 8-9 years
7. 10 or more years

67. Are you taking this course for credit?

1. Yes
2. No

68. If you have registered for credit where would you like to obtain credit? (leave blank if not registered for credit)

1. University of Kentucky
2. Other College or University

69. What was your undergraduate grade-point average? (convert to four-point scale where A = 4)

1. less than 2.25
2. 2.26-2.50
3. 2.51-2.75
4. 2.76-3.00
5. 3.01-3.25
6. 3.26-3.50
7. 3.51-4.00

70. What was your graduate grade-point average? (convert to four-point scale where A = 4)

1. less than 3.00
2. 3.01-3.25
3. 3.26-3.50
4. 3.51-3.75
5. 3.76-4.00

71 Last degree completed

1. High School Diploma
2. Baccalaureate
3. Master's
4. Specialist
5. Doctorate

72. Number of undergraduate reading courses the major emphasis of which was reading instruction.

    1. none
    2. 1
    3. 2
    4. 3
    5. 4
    6. 5 or more

73. Number of graduate reading courses the major emphasis of which was reading instruction

    1. none
    2. 1
    3. 2
    4. 3
    5. 4
    6. 5 or more

74. If you are currently enrolled in a college program which of the following best describes your purpose?

    1. Baccalaureate degree
    2 Master's degree
    3. Specialist degree
    4. Doctorate
    5. Enrolled but not in a degree program
    6. Enrolled in courses to maintain teaching certificate
    7. Not enrolled

AESP/EVAL/12/2/74/rm/gjm

SITE COORDINATOR'S CHECKLIST

Program # ________________ Site # ________________ Date ________________

Person Completing Form ____

Check each piece of equipment with which you had trouble during the past week.

___ Parabolic Antenna
___ Helical Antenna
___ Connections and Interconnecting Cables
___ VHF Console
___ 2.6 GHz Receiver
___ TV Monitor/Receiver
Teletype
a. ___ Machine
b. ___ Telephone Line
c. ___ EIA Interface

___ Xerox 400-1 Telecopier
4-Channel Equipment
a. ___ Headsets
b. ___ Student Selector Boxes
c. ___ Connectors and Cables
d. ___ Master Audio Unit
e. ___ Cassette Tape Recorder
___ No Equipment Trouble

The following items refer to today's class (check all that apply).

Audio Signal:

TV Audio (ATS-6)	VHF (ATS-3)	4-Channel	
___	___	___	None
___	___	___	Poor
___	___	___	Major Distortion
___	___	___	Minor Distortion
___	___	___	Excellent

Video Signal:

___ None
___ Poor
___ Major Distortion
___ Minor Distortion
___ Excellent

___ There was a delay in program broadcast
___ Low attendance. State probable reason ____________________
___ Cancellation or postponement of class. State probable reason ________
____
___ Missing lab materials
___ Missing evaluation materials

Student satisfaction

with program
___ High
___ Moderate
___ Low

with 4-channel
___ High
___ Moderate
___ Low

Lab materials
___ High
___ Moderate
___ Low

In the space below and on the back, write the reactions and suggestions made by the students about today's activities. Include any suggestions, special problems, or requests that you might have. Also, write student numbers of absent students on back.

Appalachian Education Satellite Project
Resource Coordinating Center
306 Frazee Hall, University of Kentucky
Lexington, Kentucky 40506

CLASS RATING FORM

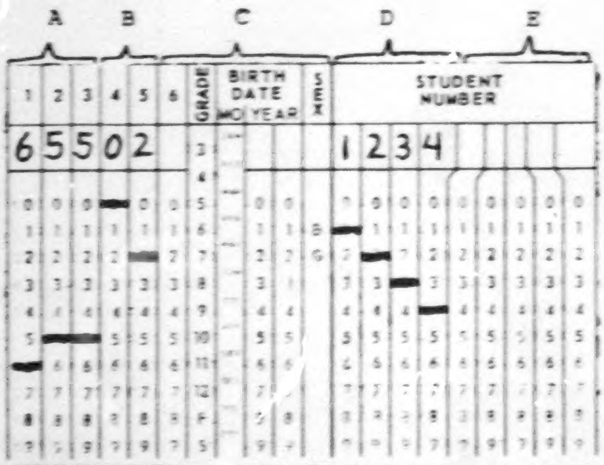
This questionnaire deals with your reactions to today's instructional activities. The questionnaire consists of four parts:

Part I - TV Program (lecture)
Part II - Four-Channel Audio Segment
Part III - Seminar
Part IV - Laboratory Activities

Only fill out the parts that correspond to today's activities, e.g., if you saw a TV program (lecture) and did the laboratory activities, you would fill out Parts I and IV.

Please answer as truthfully as possible. Your answers do not affect your grade in the course, but help us to assess the effectiveness of the course and suggest improvements.

Mark your answers on the Op-Scan sheet provided. Turn the Op-Scan sheet so that the box that says "STUDENT NUMBER" is on your lower right. Fill out the box labeled "1 2 3 4 5" and the box labeled "STUDENT NUMBER" as indicated in the diagram below.



A copy this just as it appears

B fill in the 2 digit class meeting number. The site monitor can tell you the correct number for today.

C leave blank

D fill in YOUR 4 digit student number

E leave blank

Use a soft-lead (#2) pencil to mark the answer sheet -- do not use a pen or ball-point. Be sure your mark fills the entire block of the response you wish to make. Your mark should be heavy, black and stay within the lines so that the machine can read your replies. If you change your mind or make a mistake, be sure that you erase completely. Do not make any other marks on the answer sheet.

Turn the sheet so that the words "STANDARD ANSWER SHEET-C" are on your lower left. Begin answering at the appropriate part for today's activities. Be careful that the item number on the questionnaire corresponds to the number on the Op-Scan sheet that you are marking.

PART I: TV PROGRAM (Lecture)

Mark on the Op-Scan answer sheet the responses you selected to items 1 through 15 if you watched the first televised lecture today to satisfy course requirements. Use the same question set to fill in items 16-30 on the Op-Scan sheet if you watched a second televised lecture today to satisfy course requirements. Write the title of the program(s) you saw on the Op-Scan sheet in the space labeled 'School'.

1. (16) Which presentation mode helped you most to understand the content of today's TV lecture?

   1) the instructor talking on the screen
   2) classroom scenes with the instructor describing activities
   3) the instructor explaining the information contained on charts
   4) scenes of a teacher working with students
   5) interviews of experts or practioners

2. (17) Which presentation mode was least effective in communicating the ideas in today's TV lecture?

   1) the instructor talking on the screen
   2) classroom scenes with the instructor describing activities
   3) the instructor explaining the information contained on charts
   4) scenes of a teacher working with students
   5) interviews of experts or practioners

3. (18) The program might have been more effective if the coverage had been altered in which one of the following ways?

   1) less material had been covered but in greater depth
   2) less material because there was too much to comprehend at one time
   3) more material relevant to the central issues of the course
   4) the program coverage was adequate

4. (19) Today's discussion may have been better if more time had been devoted to which one of the following?

   1) more discussion of the theoretical aspects of today's topic
   2) more discussion of procedures for using the materials
   3) more examples of how the techniques are actually applied in the classroom
   4) the discussion was an adequate mix of theoretical, procedural, and application levels for today's topic

5. (20) The discussion of topics in today's program may have been better if less time had been devoted to which one of the following?

   1) less discussion of the theoretical aspects of today's topic
   2) less discussion of procedures for using the materials
   3) fewer examples of how the techniques are actually applied in the classroom
   4) the discussion was an adequate mix of theoretical, procedural, and application levels for today's topic

6. (21) Which one of the following things might make the moderator more acceptable to you?

    1) if he enunciated more carefully
    2) if he understood more what he was talking about
    3) if he talked in a more natural way
    4) he is quite acceptable as he is

7. (22) Which one of the following improvements might make the lecture easier to follow?

    1) more explicit transitions between ideas
    2) more careful organization of the content
    3) greater amplification of main points
    4) more summary statements
    5) the program organization was acceptable the way it was

8. (23) What effect do you think today's program will have on your teaching?

    1) the information had little or no relevance for me in my teaching situation
    2) something I would like to use but probably won't be able to
    3) something I would like to use but don't understand enough to use
    4) something I plan to use
    5) something I already know or am using

Which of the following suggestions would have improved today's TV program?

9. (24) More close-ups of individual's faces were needed.

    1) yes 2) no

10. (25) More close-ups of charts, books, and other written materials were needed.

    1) yes 2) no

11. (26) Charts and written materials needed to be held on the screen longer so that they could be read through.

    1) yes 2) no

12. [illegible] Charts and written materials needed to be on the screen for a shorter period.

    1) yes 2) no

13. (28) Did the pace of the program need to move

    1) slower
    2) faster
    3) the pace was acceptable

14. (29) What is your overall evaluation of today's TV program (lecture)?

1) excellent
2) very good
3) good
4) fair
5) poor

15. (30) Do you have a specific comment or suggestion about today's TV program to make?

1) yes 2) no

If your answer was yes, write your comment on the reverse of the Op-Scan sheet.

PART II: FOUR-CHANNEL AUDIO SEGMENT

Fill out items 41 to 53 only if there was a four-channel audio segment included in today's activities.

41. Did you ever push a button and not hear anything?

1) yes 2) no

42. Was the volume satisfactory?

1) yes 2) no

43. Did you ever NOT get the channel you selected?

1) yes 2) no

44. Did you ever hear two or more channels at the same time?

1) yes 2) no

45. Did you ever hear any static or odd noises? (you might hear 'bleeps', but these are supposed to be there)

1) yes 2) no

46. The time interval in which to select a response was (choose one)

1) too long
2) too short
3) about right

47. Which one of the following changes might make the greatest improvement in the relevancy of today's audio review to today's topic?

1) if the content dealt more thoroughly with the concepts covered in the TV program
2) if the content focused more on ways to apply the techniques described in the TV program
3) if the content expanded upon concepts relevant to those introduced in the TV program
4) it is quite good as it is

48. Which one of the following would have resulted in a better four-channel audio segment?

1) there were more but shorter items
2) there were more items of the same length as they are now
3) there were more items of greater length than they are now
4) there are enough items now of about the right length
5) the problem is not with the number of items but with the use of the audio segment as an instructional medium

49. Do you feel that the questions might be most improved if

1) they were shorter
2) the problem was more clearly stated
3) both 1 and 2
4) the length and clarity of the questions were satisfactory

50. Do you feel the alternatives might be most improved if they were

1) shorter
2) longer
3) fewer
4) they were O.K. as they were

51. Do you feel the explanations of the answers might be most improved if they were

1) more thorough but almost the same length
2) briefer and more to the point
3) longer with more thorough coverage
4) the length and coverage was adequate

52. What is your overall evaluation of today's four-channel audio segment?

1) excellent
2) very good
3) good
4) fair
5) poor

53. Do you have a specific comment or suggestion about the four-channel you want to make?

1) yes 2) no

If your answer was yes, write your comment on the reverse of the Op-Scan sheet. answer sheet.

PART III: SEMINAR

Answer items 81 to 90 only if a seminar was presented as part of today's activities.

81. Which one of the following format changes would you select to make the seminar format more effective?

    1) a one-hour televised seminar with a 15 minute intermission so that questions can be generated and transmitted
    2) a two-hour seminar with several 15 minute intermissions for question generation and transmission
    3) one-hour televised seminar with the opportunity for question generation during the program and 15 minutes prior to the program
    4) one-hour television seminar with direct voice line hook-up between individual sites and TV studio
    5) one-hour conference call between one or more content experts and all sites

82. Which one of the following would have made today's seminar more effective?

    1) the course instructor answering the questions himself without guests
    2) use more teachers as guests
    3) use more professors or other experts as guests
    4) the seminar participants were fine

83. Which one of the following seminar formats might help you think of more meaningful questions to ask?

    1) have at the beginning of the seminar a 10 minute summary of course content covered since the last seminar
    2) show a 10 minute film with short segments from previous programs at the beginning of the seminar
    3) show at the beginning of the seminar a short film illustrating several new classroom demonstrations of material covered
    4) have the opportunity to use the whole seminar for question answering and discussion rather than spending part of the program for question stimulation

84. The answers to the questions could have been more valuable had they been handled in which one of the following ways?

    1) less discussion of theoretical aspects of the question
    2) more frequent use of specific classroom examples
    3) more direct answers to the questions
    4) I was very satisfied with the answers I heard

85. The seminar moderator could have been more effective had he been more alert to which one of the following?

1) kept the guests on the topic better
2) provided summary statements occasionally
3) allowed each guest equal time to respond to questions
4) kept the seminar moving at a faster pace so more questions could be answered

86. Which one of the following factors would have made the seminar guests' presentations more useful?

1) not repeating themselves
2) keeping on the topic of the question
3) allowing them to express themselves better
4) relating their answers to practical situations
5) the guests' presentations were excellent

87. If there was not time to answer your questions on the seminar do you feel that the answer you will receive via teletype or VHF will be useful?

1) yes 2) no

88. Do you feel that answering questions via teletype or VHF is a service that needs to be continued?

1) yes 2) no

89. What is your overall evaluation of today's seminar?

1) excellent
2) very good
3) good
4) fair
5) poor

90. Do you have a specific comment or suggestion about the seminar you want to make?

1) yes 2) no

If your answer was yes, write your comment on the reverse of the Op-Scan sheet.

PART IV: LABORATORY ACTIVITIES

Answer items 121 through 134 only if there were laboratory activites (lab) today.

121. Did you use materials from the reference shelf during today's meeting?

1) I needed to, but there was not enough time
2) there was no need to use the materials today
3) I used the materials a little
4) I used the materials quite a bit

122. How much time did you spend working on the lab today?

1) 30 minutes or less
2) 45 minutes
3) 60 minutes
4) 90 minutes
5) two hours or more

How would you have improved today's laboratory activities?

123. For today's lab I would try to cover

1) more material
2) less material
3) the lab was O.K. in this area

124. Clearer instructiona are needed for the lab activities.

1) yes 2) the lab was O.K. in this area

125. Select lab activities more related to today's topic.

1) yes 2) the lab was O.K. in this area

126. Allow more time for the lab activities to be completed.

1) yes 2) the lab was O.K. in this area

127. Provide activities that were of a more applied and practical nature,

1) yes 2) the lab was O.K. in this area

128. Require less material to be read prior to class as preparation.

1) yes 2) the reading assignments were O.K.

129. Require more relevant, preparatory readings for today's activities.

1) yes 2) the reading assignments were O.K.

130. Stock materials that are more relevant on the reference shelf.

1) yes 2) the reference shelf was adequate for today's assignment

131. Would have assigned more useful homework last week.

1) yes 2) no, the homework was very useful

132. What is your overall evaluation of today's laboratory activities?

1) excellent
2) very good
3) good
4) fair
5) poor

133. Did you feel there were any activities that were especially innovative or creative in today's lab?

1) yes 2) no

If so, please identify those activities on the back of the Op-Scan sheet.

134. Do you have a specific comment or suggestion about the lab you want to make?

1) yes 2) no

If your answer was yes, write your comment on the reverse of the Op-Scan sheet.

AESP/EVAL/12/5/74/rm/gjm

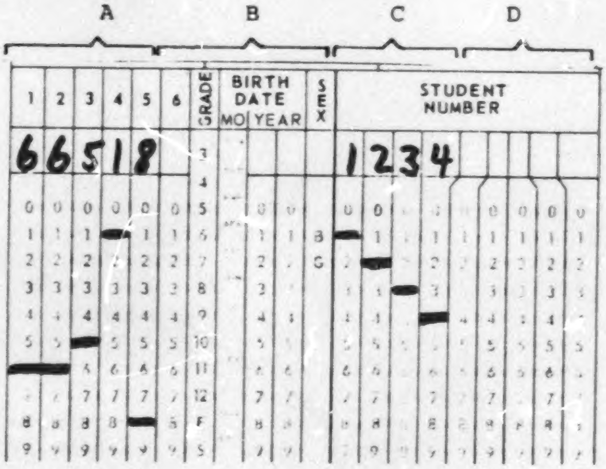
Appalachian Education Satellite Project
Resource Coordinating Center
Evaluation Component
306 Frazee Hall, University of Kentucky
Lexington, Kentucky 40506

DPRI INFORMATION SYSTEMS QUESTIONNAIRE

Instructions

This questionnaire has two parts. Part I is concerned with your attitudes toward the information systems presented in class. Part II is concerned with the degree to which you used the information systems to assist you in developing course materials for the classes you teach. Please answer as truthfully as possible. Your answers do not affect your grade in the course, but help us to assess the effectiveness of these systems and suggest improvements.

Write your replies on the Op-Scan sheet provided. Turn the Op-Scan sheet so that the box that says "STUDENT NUMBER" is on your lower right. Fill out the box labeled "1 2 3 4 5" and the box labeled "STUDENT NUMBER" as indicated in the diagram below.



A copy this just as it appears "66518"

B leave blank

C fill in YOUR 4 digit student number

D leave blank

Use a soft-lead (#2) pencil to mark the answer sheet -- do not use a pen or ball-point. Be sure your mark fills the entire block of the response you wish to make. Your mark should be heavy, black and stay within the lines so that the Op-Scan machine can read your replies. If you change your mind or make a mistake, be sure that you erase completely. Do not make any other marks on the answer sheet.

Turn the sheet so that the words "STANDARD ANSWER SHEET-C" are on your lower left. Begin answering at number 1. Indicate your answers to the items by placing a heavy vertical line in the column beside the appropriate item number on the answer sheet. Be careful that the item number on the questionnaire corresponds to the number on the Op-Scan sheet that you are marking.

PART I

For Part I Mark:

5) if you strongly agree with the statement
4) if you moderately agree
3) if you feel neutral
2) if you moderately disagree
1) if you strongly disagree

If you did not use the information system referred to in the statement, do not rate the statement (leave that item on the Op-Scan sheet blank).

1. The Select-Ed manual adequately explained how to use and interpret this information system.
2. The search request form for the Select-Ed system was clear in its format.
3. The Select-Ed search(es) I ran provided me with useful information.
4. The information received from the Select-Ed system was easy to interpret.
5. If the Select-Ed system were available to me, in my school system, I would use it to aid me in my teaching.
6. The Kentucky System manual adequately explained how to use and interpret this information system.
7. The search request form for the Kentucky System was clear in its format.
8. The Kentucky System search(es) I ran provided me with useful information.
9. The information received from the Kentucky System was easy to interpret.
10. If the Kentucky system were available to me, in my school system, I would use it to aid me in my teaching.

---

*Kentucky System is an abbreviation for "Kentucky Special Education Materials Information System."

PART II

Section A

11. How many times during this semester did you request searches using the Select-Ed system?

    1. I only did the class assignment
    2. One time, other than the class assignment
    3. Two times
    4. Three times
    5. Four, or more times

12. How many times during this semester did you request searches using the Kentucky System?

    1. Never
    2. One time
    3. Two times
    4. Three times
    5. Four, or more times

Section B

If you _did_ request a search using the Select-Ed system, in addition to the one search that was a class assignment, please skip to Section C. Otherwise answer yes or no to Questions 13-15 below concerning your reasons for not requesting additional Select-Ed searches.

13. I did not have the time to carefully study the manual so I could run a search.

    1. Yes
    2. No

14. The directions and procedures to request a search were confusing and made it difficult to use the system.

    1. Yes
    2. No

15. I did not use the Select-Ed system because it just gives you references that you have to look up in the library.

    1. Yes
    2. No

Section C

If you did request any Kentucky System searches, skip to Section D. If you did not request a search using the Kentucky System answer yes or no to items 16-18 below.

16. I did not have the time to carefully study the manual so I could run a search.

    1. Yes
    2. No

17. The directions and procedures to request a search were confusing and made it difficult to use the system.

    1. Yes
    2. No

18. I did not use the Kentucky System because it just gives you references that you have to look up in the library.

    1. Yes
    2. No

Section D

Answer yes to the following suggested improvements in the information system procedures if you think such improvements would be of benefit. Answer no if you do not feel that the suggestion would be of substantial benefit.

19. Provide manuals that are easier to understand.

    1. Yes
    2. No

20. Provide simpler forms to use to request searches.

    1. Yes
    2. No

21. Give the site monitor training in the information system so that he/she is a more effective instructor.

    1. Yes
    2. No

22. Develop a video program that would explain the use of the information systems in a more adequate manner than the present video program (program 7 - Prescriptive Instructional Systems).

    1. Yes
    2. No

Section E

Would you have utilized the information systems more if the materials recommended in the searches were readily available

23. At the AESP classroom site?

    1. Yes
    2. No

24. At your school?

    1. Yes
    2. No

25. At some central location (e.g., school district headquarters, local college, etc.)?

    1. Yes
    2. No

Did you know that you could run searches on your own (over and above the class assignment?

26. For Select-Ed

    1. Yes
    2. No

27. For the Kentucky System

    1. Yes
    2. No

28. Did your site coordinator encourage you to run information searches on your own?

    1. Yes
    2. No

Did you incorporate materials suggested by your searches in your lessons?

29. Select-Ed suggested materials

    1. Yes
    2. No

30. Kentucky system suggested materials

    1. Yes
    2. No

31. Did you look up materials suggested in the searches?

    1. Yes
    2. No

32. If your answer to item 31 is no, why did you not look up materials suggested by the searches? Otherwise, leave this item blank.

    1. I did not have time
    2. Materials suggested could not be found within a reasonable distance
    3. I did not know where to go to find the materials
    4. It was too much trouble
    5. Other reason

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Resource Coordinating Center
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READING

SUMMATIVE COMMENTS FORM

Student Number ____________________________ Site _____________________________

In order to evaluate the overall effectiveness of the course and to provide information for future course revision, please summarize your general impressions of the course. Try to be as specific as possible in stating what you liked about the course, what you disliked, and why. Write your comments on this form. There is no Op-Scan sheet.

1) Were there any specific programs that you liked or did not like? Why?

2) What suggestions for course improvement do you have? Please be as specific as possible.

3) Would you recommend this course to your peers? Why or why not?

4) Include any other information which you feel would be useful in evaluating the overall effectiveness of the course. Please try to be as specific as possible.

Rate the following ten instructional activities according to the quantity of useful information you received from each. Make your standard of reference an average, graduate education course. Rate the value of the activity by marking the point on the scale that best expresses your attitude. The closer to 1 the more outstanding you found the activity, while the closer to 8 the more unacceptable you found the activity.

1. Pre-Program Preparation compared to work usually assigned in other graduate classes prior to covering material in class.

outstanding unacceptable
1 2 3 4 5 6 7 8

Comments:

2. TV Program compared to a graduate lecture.

outstanding unacceptable
1 2 3 4 5 6 7 8

Comments:

3. Four-Channel Audio compared to class quizzes followed by a discussion of the answers.

outstanding unacceptable
1 2 3 4 5 6 7 8

Comments:

4. Laboratory Activities compared to laboratory activities associated with other graduate courses.

outstanding unacceptable
1 2 3 4 5 6 7 8

Comments:

5. On-site Reference Materials compared to materials placed on reserve by other graduate instructors.

outstanding unacceptable

1 2 3 4 5 6 7 8

Comments:

6. Televised, Interactive Seminars compared to other graduate seminars and class discussions.

outstanding unacceptable

1 2 3 4 5 6 7 8

Comments:

7. The Seminar Host and Guests as knowledgeable, fluent discussants of the seminar topics.

outstanding unacceptable

1 2 3 4 5 6 7 8

Comments:

8. Information Retrieval Systems Materials compared to materials instructors in other graduate courses locate to help specific individuals.

outstanding unacceptable

1 2 3 4 5 6 7 8

Comments:

9. Follow-up Activities and homework assignments compared to similar activities in other graduate courses.

outstanding unacceptable

1	2	3	4	5	6	7	8

Comments:

10. The Site Coordinator as an effective course leader.

outstanding unacceptable

1	2	3	4	5	6	7	8

Comments:

AESP/EVAL/rm/mt/12/6/74

APPENDIX 2

	Page
TABLE A: PARTICIPANT RESPONSES TO TELEVISION PROGRAMS FROM CLASS RATING FORM	109
TABLE B: PARTICIPANT RESPONSES TO FOUR-CHANNEL AUDIO SEGMENTS FROM CLASS RATING FORM	114
TABLE C: PARTICIPANT RESPONSES TO SEMINARS FROM CLASS RATING FORM	117
TABLE D: PARTICIPANT RESPONSES TO LABORATORY ACTIVITIES FROM CLASS RATING FORM	120

TABLE A

PARTICIPANT RESPONSES TO TELEVISION PROGRAMS FROM CLASS RATING FORM

Item	Response	Class Session	2		3	5		6	7	9	10		11	13		14		15	17
		Program	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.	1		30 24%	21 15%	40 30%	29 29%	15 22%	48 40%	35 30%	32 23%	11 10%	10 14%	24 20%	15 15%	17 23%	18 16%	16 18%	15 13%	20 17%
	2		45 35%	52 37%	44 33%	40 41%	21 31%	30 25%	33 29%	58 42%	43 38%	27 38%	48 39%	33 30%	29 40%	43 38%	31 34%	43 39%	49 42%
	3		9 7%	17 12%	15 11%	5 5%	7 10%	15 13%	7 6%	1 1%	2 2%	0 0%	1 1%	1 1%	3 4%	2 2%	1 1%	3 3%	3 3%
	4		26 20%	39 28%	34 25%	22 22%	20 29%	26 22%	7 6%	34 24%	35 31%	23 43%	44 36%	47 47%	20 27%	40 35%	37 41%	44 39%	36 31%
	5		17 14%	12 8%	2 1%	3 3%	5 8%	0 0%	33 29%	14 10%	21 19%	12 15%	5 4%	4 4%	4 6%	10 9%	6 6%	7 6%	9 8%
2.	1		31 25%	41 29%	32 25%	15 15%	11 17%	32 29%	41 37%	39 28%	35 31%	26 37%	40 33%	27 28%	15 21%	31 28%	26 30%	31 30%	37 32%
	2		11 9%	13 9%	13 10%	19 19%	10 15%	14 12%	13 12%	13 9%	19 17%	10 14%	15 12%	14 14%	10 14%	15 14%	12 14%	15 13%	9 8%
	3		42 33%	47 34%	38 29%	20 21%	15 23%	24 21%	18 16%	30 22%	26 23%	15 21%	30 25%	17 17%	17 24%	33 30%	20 23%	22 20%	25 22%
	4		20 16%	19 14%	23 18%	16 16%	8 12%	21 19%	14 13%	22 16%	12 11%	6 8%	12 10%	4 4%	7 10%	9 8%	15 18%	18 16%	7 6%
	5		22 17%	19 14%	24 18%	28 29%	21 33%	21 19%	25 22%	33 25%	20 18%	14 20%	25 20%	36 37%	23 31%	23 20%	13 15%	25 21%	38 33%

TABLE A--CONTINUED

Item	Response	Class Session	2		3	5		6	7	9	10		11	13		14		15	17
		Program	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
3.	1		19 15%	28 20%	25 19%	12 12%	6 9%	15 13%	11 10%	17 12%	12 11%	7 10%	15 12%	5 5%	3 4%	11 10%	7 8%	3 3%	5 4%
	2		31 25%	37 26%	13 10%	2 2%	7 11%	31 26%	6 5%	5 4%	2 2%	5 7%	5 4%	2 2%	3 4%	5 4%	5 5%	3 3%	0 0%
	3		7 6%	15 11%	21 15%	11 11%	9 14%	11 9%	8 7%	19 14%	8 7%	5 7%	16 13%	9 9%	9 12%	7 6%	7 8%	8 7%	11 9%
	4		68 54%	60 43%	76 56%	73 75%	44 66%	62 52%	90 78%	96 70%	89 80%	52 76%	86 71%	83 84%	58 80%	90 80%	72 79%	98 87%	100 86%
4.	1		1 1%	3 2%	8 6%	3 3%	2 3%	7 6%	0 0%	4 3%	3 3%	1 1%	3 2%	4 4%	2 3%	2 2%	2 2%	2 2%	5 4%
	2		26 21%	41 29%	25 18%	13 13%	16 24%	40 34%	22 19%	24 17%	14 12%	10 14%	16 13%	10 10%	12 16%	14 12%	9 10%	9 8%	8 7%
	3		42 33%	42 30%	47 35%	27 27%	11 17%	31 26%	25 22%	43 31%	35 31%	22 31%	36 30%	23 23%	12 16%	17 15%	18 20%	18 16%	17 15%
	4		57 45%	55 39%	55 41%	57 57%	37 56%	41 34%	68 59%	68 49%	60 54%	37 54%	67 55%	63 63%	47 65%	80 71%	61 68%	83 75%	87 74%
5.	1		40 32%	51 37%	36 27%	19 19%	11 17%	30 27%	20 18%	27 19%	16 14%	12 17%	28 23%	16 16%	12 17%	14 12%	14 16%	13 12%	12 10%
	2		3 2%	3 2%	12 9%	2 2%	2 3%	5 4%	3 3%	4 3%	6 5%	3 4%	4 3%	4 4%	2 3%	1 1%	4 4%	2 2%	3 3%

TABLE A--CONTINUED

Item	Response	Class Session	2		3	5		6	7	9	10		11	13		14		15	17
		Program	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
5.	3		7 6%	7 5%	15 11%	7 7%	4 6%	7 6%	3 3%	14 10%	3 3%	1 1%	6 5%	6 6%	2 3%	3 3%	2 2%	5 4%	4 3%
	4		74 60%	76 56%	69 53%	72 72%	47 74%	71 63%	86 76%	94 68%	87 78%	53 78%	83 69%	73 74%	56 77%	94 84%	70 78%	92 82%	96 83%
6.	1		3 2%	6 4%	7 5%	6 6%	4 6%	7 6%	1 1%	4 3%	4 4%	3 4%	4 3%	3 3%	5 7%	2 2%	3 3%	1 1%	4 3%
	2		0 0%	0 0%	2 2%	2 2%	1 2%	3 3%	2 2%	1 1%	0 0%	2 3%	1 1%	0 0%	1 1%	4 4%	1 1%	0 0%	2 2%
	3		31 25%	27 19%	35 26%	26 26%	17 26%	21 17%	22 19%	21 15%	13 12%	8 11%	20 16%	10 10%	3 4%	16 14%	12 13%	9 8%	6 5%
	4		91 73%	107 77%	89 67%	64 66%	42 66%	89 74%	90 78%	112 81%	94 84%	57 82%	97 80%	87 87%	64 88%	89 80%	73 83%	102 91%	105 90%
7.	1		8 6%	19 13%	9 7%	5 5%	2 3%	8 7%	3 3%	5 4%	3 3%	4 6%	4 3%	0 0%	1 1%	4 4%	3 3%	1 1%	2 2%
	2		3 2%	2 1%	5 3%	2 2%	0 0%	4 3%	0 0%	2 1%	2 2%	2 3%	6 5%	1 1%	5 7%	4 4%	3 3%	0 0%	1 1%
	3		41 33%	44 32%	47 35%	18 18%	15 23%	34 29%	19 17%	19 14%	14 12%	9 13%	22 18%	13 13%	8 11%	11 10%	11 12%	8 7%	7 6%
	4		37 29%	31 22%	27 20%	19 19%	10 15%	19 16%	22 19%	24 17%	19 17%	16 23%	18 15%	9 9%	13 18%	15 13%	15 16%	14 13%	21 18%
	5		38 30%	45 32%	47 35%	57 56%	38 59%	54 45%	71 61%	89 64%	74 66%	40 55%	72 59%	77 77%	46 63%	79 70%	59 66%	88 79%	86 74%

TABLE A--CONTINUED

Item	Response	Class Session	2		3	5		6	7	9	10		11	13		14		15	17
		Program	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
8	1		8 6%	7 5%	6 4%	4 4%	4 6%	16 13%	9 8%	5 4%	15 13%	4 5%	6 5%	6 6%	6 8%	7 6%	4 4%	0 0%	4 3%
	2		2 2%	7 5%	9 7%	17 17%	18 28%	34 28%	36 31%	19 14%	7 6%	5 7%	14 11%	5 5%	4 5%	3 3%	10 11%	8 7%	10 9%
	3		34 27%	41 29%	9 7%	9 9%	3 5%	26 22%	9 8%	9 6%	5 4%	5 7%	12 10%	1 1%	3 4%	3 3%	5 6%	1 1%	4 3%
	4		57 45%	70 50%	70 52%	63 62%	36 56%	41 34%	56 49%	64 46%	63 56%	45 62%	61 50%	71 71%	47 65%	65 58%	52 58%	78 70%	78 67%
	5		25 20%	16 11%	41 30%	8 8%	3 5%	3 3%	5 4%	42 30%	23 21%	14 19%	29 24%	17 17%	13 18%	35 30%	19 21%	24 22%	21 18%
9	1		12 10%	18 13%	22 16%	6 6%	3 5%	12 10%	5 4%	8 6%	7 6%	3 5%	9 8%	6 6%	5 7%	4 4%	3 3%	5 4%	4 3%
	2		113 90%	123 87%	113 84%	92 94%	60 95%	108 90%	110 96%	128 94%	104 94%	60 95%	107 92%	94 94%	67 93%	109 96%	87 97%	105 96%	113 97%
10	1		61 48%	73 52%	70 52%	32 32%	17 27%	39 33%	48 42%	43 31%	27 25%	15 23%	33 28%	25 25%	16 23%	27 24%	14 16%	20 18%	20 17%
	2		65 52%	67 48%	65 48%	67 68%	47 73%	81 67%	67 58%	94 69%	81 75%	49 77%	86 72%	75 75%	55 77%	86 75%	74 84%	92 82%	97 83%
11	1		96 77%	105 75%	98 73%	65 66%	40 63%	80 67%	49 43%	50 36%	40 36%	29 41%	31 26%	33 33%	23 32%	36 32%	31 35%	25 22%	18 15%
	2		29 23%	35 25%	37 27%	33 34%	23 37%	39 33%	66 57%	88 64%	70 64%	41 59%	89 74%	67 67%	48 68%	76 68%	58 65%	87 78%	99 85%

TABLE A--CONTINUED

Item	Response	Class Session	2		3	5		6	7	9	10		11	13		14		15	17
		Program	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
12	1		5 4%	14 10%	4 3%	3 3%	4 6%	1 1%	1 1%	10 7%	5 4%	6 9%	3 2%	4 4%	4 6%	2 2%	4 5%	4 4%	2 3%
	2		120 96%	124 90%	131 97%	96 97%	58 94%	118 99%	114 99%	126 93%	105 96%	62 91%	116 98%	95 96%	64 94%	111 98%	83 95%	106 96%	114 97%
13	1		61 49%	68 49%	66 49%	22 22%	14 22%	49 41%	18 16%	25 18%	18 16%	8 12%	8 7%	5 5%	2 3%	4 3%	6 7%	2 2%	2 2%
	2		9 7%	4 3%	12 9%	10 10%	11 17%	3 3%	2 2%	9 7%	5 4%	2 3%	9 7%	12 12%	7 10%	10 9%	8 9%	4 4%	8 7%
	3		55 44%	66 48%	57 42%	68 68%	39 61%	68 56%	95 82%	104 75%	88 80%	59 85%	105 86%	83 83%	60 87%	99 88%	71 84%	105 94%	107 91%
14	1		16 13%	22 16%	11 8%	14 14%	9 14%	19 16%	19 17%	18 13%	21 19%	12 17%	21 17%	21 21%	15 21%	24 21%	17 19%	20 18%	21 18%
	2		46 37%	59 43%	47 34%	47 47%	27 42%	34 28%	43 37%	65 47%	46 41%	27 38%	56 46%	41 41%	27 38%	41 36%	34 38%	52 46%	48 41%
	3		48 38%	43 31%	52 39%	31 31%	21 32%	43 36%	45 39%	45 32%	40 36%	28 39%	42 34%	32 32%	18 25%	39 35%	28 31%	36 32%	38 32%
	4		12 10%	11 8%	24 18%	7 7%	8 12%	15 12%	8 7%	11 8%	5 4%	4 6%	3 3%	4 4%	9 13%	8 7%	10 10%	4 4%	8 7%
	5		3 2%	3 2%	1 1%	1 1%	0 0%	9 8%	0 0%	0 0%	0 0%	0 0%	0 0%	2 2%	2 3%	1 1%	1 2%	0 0%	2 2%
15	1		29 23%	24 18%	26 20%	9 9%	7 11%	28 24%	14 12%	12 9%	10 9%	8 12%	8 7%	5 5%	6 9%	12 11%	8 9%	6 5%	3 3%
	2		97 77%	112 82%	107 80%	88 91%	55 89%	91 76%	101 88%	122 91%	102 21%	60 88%	113 93%	94 95%	63 91%	99 89%	81 91%	105 95%	112 91%

TABLE B

PARTICIPANT RESPONSES TO FOUR-CHANNEL AUDIO SEGMENTS FROM CLASS RATING FORM

Item	Response	Programs that Four-Channel followed						
		3	6	7	8	11	16	17
41.	1	11 9%	26 22%	14 11%	12 9%	13 12%	41 39%	14 12%
	2	117 91%	94 78%	116 89%	124 91%	100 78%	65 61%	103 88%
42.	1	124 97%	118 98%	123 95%	128 93%	108 96%	85 80%	109 93%
	2	4 3%	2 2%	7 5%	9 7%	4 4%	21 20%	8 7%
43.	1	4 3%	15 13%	8 6%	8 6%	10 9%	16 15%	8 7%
	2	125 97%	104 87%	121 94%	128 94%	102 91%	89 85%	109 93%
44.	1	33 26%	21 18%	19 15%	12 9%	9 8%	14 13%	11 9%
	2	96 74%	99 82%	111 85%	122 91%	101 92%	92 87%	105 90%
45.	1	37 29%	29 24%	43 33%	25 19%	17 15%	41 40%	16 14%
	2	91 71%	91 76%	86 67%	109 81%	95 85%	61 60%	100 85%
46.	1	27 21%	25 21%	18 13%	40 29%	20 18%	24 24%	27 23%
	2	4 3%	4 3%	3 2%	2 1%	0 0%	5 5%	0 0%
	3	97 76%	90 76%	118 85%	94 70%	91 82%	71 71%	87 75%

TABLE B--CONTINUED

Item	Response	Programs that Four-Channel followed						
		3	6	7	8	11	16	17
47.	1	9 7%	3 3%	3 2%	1 1%	9 8%	4 4%	3 3%
	2	26 21%	13 11%	20 16%	9 7%	15 13%	11 11%	8 7%
	3	11 9%	5 4%	6 5%	11 8%	8 7%	6 6%	3 3%
	4	80 63%	99 82%	99 77%	114 84%	84 72%	80 79%	103 88%
48.	1	16 13%	23 19%	22 17%	24 18%	16 14%	13 13%	17 15%
	2	38 30%	26 22%	16 13%	25 18%	19 16%	16 15%	18 15%
	3	5 4%	0 0%	4 3%	2 1%	2 2%	2 2%	4 3%
	4	59 46%	61 51%	74 58%	79 58%	72 62%	58 56%	66 56%
	5	9 7%	9 8%	12 9%	7 5%	7 6%	14 14%	12 10%
49.	1	12 9%	20 17%	17 13%	22 16%	15 13%	10 10%	12 10%
	2	18 14%	7 6%	3 2%	7 5%	8 7%	3 3%	1 1%
	3	16 13%	11 9%	13 10%	15 11%	11 9%	7 7%	9 8%
	4	82 64%	81 68%	95 75%	90 68%	82 71%	83 80%	95 81%

TABLE B--CONTINUED

Item	Response	Programs that Four-Channel followed						
		3	6	7	8	11	16	17
50.	1	30 23%	25 21%	30 23%	30 22%	20 17%	11 11%	15 13%
	2	3 2%	1 1%	2 2%	4 3%	9 8%	0 0%	3 3%
	3	5 4%	5 4%	1 1%	4 3%	2 2%	3 3%	5 4%
	4	90 71%	88 74%	95 74%	95 72%	85 73%	88 86%	94 80%
51.	1	11 9%	6 5%	6 5%	2 1%	4 4%	3 3%	5 4%
	2	27 21%	26 22%	27 21%	25 19%	22 20%	14 13%	17 15%
	3	3 2%	2 2%	3 2%	5 4%	1 1%	2 2%	6 5%
	4	87 68%	85 71%	92 72%	102 76%	83 75%	83 82%	88 76%
52.	1	17 14%	25 21%	22 17%	20 15%	17 15%	10 9%	19 16%
	2	45 35%	45 38%	52 40%	68 50%	36 33%	31 29%	36 31%
	3	53 41%	38 32%	37 29%	33 24%	47 43%	34 32%	44 38%
	4	12 9%	8 7%	11 9%	13 10%	9 8%	19 18%	13 11%
	5	1 1%	2 2%	7 5%	1 1%	1 1%	12 12%	4 3%
53.	1	17 14%	9 8%	9 7%	10 8%	10 9%	16 15%	2 2%
	1	106 86%	108 92%	117 93%	121 92%	96 91%	87 85%	110 97%

TABLE C

PARTICIPANT RESPONSES TO SEMINARS FROM CLASS RATING FORM

Item	Response	Seminar				
		1	2	3	4	5
81.	1	47 39%	38 29%	49 38%	42 32%	43 32%
	2	5 4%	5 4%	2 2%	6 5%	8 6%
	3	25 21%	32 24%	35 27%	34 26%	32 24%
	4	36 30%	49 38%	41 31%	40 31%	42 31%
	5	7 6%	7 5%	3 2%	8 6%	10 7%
82.	1	9 8%	4 3%	5 4%	13 10%	13 9%
	2	39 32%	23 18%	30 23%	47 35%	27 19%
	3	14 12%	16 12%	7 5%	3 2%	2 1%
	4	58 48%	88 67%	90 68%	72 53%	97 70%
83.	1	46 38%	49 38%	47 36%	49 36%	54 40%
	2	12 10%	14 11%	16 12%	13 10%	12 9%
	3	23 19%	29 22%	30 23%	35 26%	34 25%
	4	41 33%	38 29%	38 29%	38 28%	35 26%

TABLE C--CONTINUED

Item	Response	Seminar 1	Seminar 2	Seminar 3	Seminar 4	Seminar 5
84.	1	5 4%	7 5%	10 7%	12 9%	2 1%
	2	33 28%	30 23%	31 24%	20 15%	27 19%
	3	44 36%	23 18%	22 17%	49 36%	19 14%
	4	39 32%	70 54%	68 52%	54 40%	91 65%
85.	1	12 11%	12 10%	9 8%	37 31%	15 12%
	2	74 66%	76 62%	65 60%	39 33%	64 52%
	3	14 12%	9 7%	11 10%	8 7%	11 9%
	4	12 11%	25 21%	24 22%	35 29%	33 27%
86.	1	9 8%	2 2%	19 14%	9 7%	6 4%
	2	8 7%	5 4%	2 1%	20 15%	7 5%
	3	4 3%	3 2%	6 5%	9 7%	8 6%
	4	67 55%	45 34%	53 40%	55 41%	44 32%
	5	33 27%	76 58%	51 40%	41 31%	73 53%

TABLE C--CONTINUED

Item	Response	Seminar				
		1	2	3	4	5
87.	1	102 91%	111 88%	104 87%	116 90%	112 85%
	2	10 9%	15 12%	16 13%	12 9%	17 13%
88.	1	110 95%	117 95%	113 89%	122 90%	119 86%
	2	6 5%	6 5%	14 11%	13 10%	17 12%
89.	1	14 11%	34 26%	23 17%	11 8%	27 20%
	2	44 37%	47 36%	51 39%	45 33%	55 40%
	3	38 31%	34 26%	35 26%	35 26%	34 25%
	4	20 16%	11 8%	17 13%	34 25%	15 11%
	5	6 5%	5 4%	6 5%	10 7%	7 5%
90.	1	33 28%	23 18%	16 12%	20 16%	17 13%
	2	84 72%	104 82%	112 88%	111 83%	116 86%

TABLE D

PARTICIPANT RESPONSES TO LABORATORY ACTIVITIES FROM CLASS RATING FORM

Item	Response	Class Session	2*	3	5		6	7	9	10		11	13		14		15	17
		Program	1 & 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
121.	1		19 18%	11 9%	1 2%	3 21%	13 12%	7 5%	5 4%	4 7%	1 4%	8 7%	1 1%	1 3%	2 2%	0 0%	1 1%	2 2%
	2		45 42%	66 55%	31 66%	7 50%	71 63%	87 70%	99 73%	41 72%	24 86%	73 61%	57 65%	20 65%	49 59%	28 78%	61 54%	64 67%
	3		28 26%	21 18%	12 26%	2 14%	16 14%	21 17%	22 16%	7 12%	0 0%	29 24%	17 19%	7 23%	15 18%	3 8%	33 29%	16 17%
	4		16 15%	21 18%	3 6%	2 14%	12 11%	9 8%	9 7%	5 9%	3 11%	10 8%	13 15%	3 10%	17 20%	5 14%	17 16%	13 14%
122.	1		34 32%	27 23%	10 21%	1 7%	11 10%	30 24%	24 18%	9 16%	5 18%	18 15%	19 22%	4 13%	8 10%	10 28%	17 15%	22 23%
	2		17 16%	17 14%	9 19%	5 36%	27 24%	24 20%	33 24%	15 26%	9 32%	25 21%	11 12%	4 13%	20 24%	5 14%	20 18%	12 12%
	3		13 12%	31 26%	12 26%	5 36%	34 30%	34 28%	39 29%	12 21%	11 39%	30 25%	21 24%	9 29%	25 30%	11 31%	24 21%	25 26%
	4		29 27%	23 19%	6 13%	0 0%	32 28%	22 18%	33 24%	13 23%	2 7%	29 24%	25 28%	11 35%	21 25%	8 22%	39 35%	27 28%
	5		14 13%	21 18%	10 21%	3 21%	9 8%	13 10%	7 5%	8 14%	1 4%	18 15%	12 14%	3 10%	9 11%	2 6%	11 11%	10 10%

*Participants did both laboratory activities for this session.

TABLE D--CONTINUED

Item	Response	Class Session	2	3	5		6	7	9	10		11	13		14		15	17
		Program	1 & 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
123.	1		9 8%	10 8%	6 13%	2 15%	6 5%	10 8%	10 22%	2 4%	2 7%	8 7%	3 3%	1 3%	3 4%	4 11%	6 5%	7 7%
	2		38 35%	15 13%	6 13%	14 31%	35 31%	19 16%	23 19%	14 25%	4 14%	24 20%	12 14%	7 23%	11 13%	7 19%	15 14%	8 8%
	3		60 56%	94 79%	35 74%	7 54%	72 64%	92 76%	102 59%	41 72%	22 79%	87 73%	73 83%	23 74%	69 83%	25 69%	88 81%	81 84%
124.	1		39 39%	30 25%	7 16%	5 38%	31 28%	27 22%	23 17%	12 22%	5 20%	11 9%	10 12%	4 13%	8 10%	2 6%	9 8%	8 8%
	2		63 61%	90 75%	39 84%	8 62%	80 72%	96 78%	111 83%	44 78%	22 80%	107 91%	76 88%	27 87%	75 90%	34 94%	101 92%	86 90%
125.	1		14 14%	17 15%	2 5%	2 15%	10 9%	9 7%	15 11%	2 4%	1 4%	8 7%	5 6%	4 14%	5 6%	3 8%	6 5%	9 10%
	2		90 86%	99 85%	44 95%	11 85%	101 91%	112 93%	116 89%	54 96%	26 96%	110 93%	83 94%	26 85%	77 93%	33 92%	106 95%	84 89%
126.	1		41 38%	27 23%	4 9%	3 23%	29 26%	14 11%	24 18%	10 18%	3 12%	16 14%	5 6%	3 10%	9 11%	2 6%	12 11%	7 7%
	2		65 60%	93 77%	43 91%	10 77%	82 74%	109 89%	112 82%	46 82%	24 88%	101 86%	83 94%	28 90%	74 89%	34 94%	100 89%	87 91%
127.	1		21 20%	17 14%	9 19%	1 8%	21 19%	18 15%	23 17%	7 12%	3 12%	14 12%	6 7%	5 17%	5 7%	6 17%	10 9%	6 6%
	2		85 79%	102 86%	38 81%	12 92%	91 81%	105 85%	113 83%	50 88%	24 88%	103 88%	82 93%	25 83%	76 93%	30 83%	102 91%	89 93%

TABLE D--CONTINUED

Item	Response	Class Session	2	3	5		6	7	9	10		11	13		14		15	17
		Program	1 & 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
128.	1		48 45%	42 35%	9 19%	3 23%	66 59%	27 22%	41 30%	21 37%	11 39%	48 41%	16 18%	16 52%	20 24%	17 47%	37 34%	16 17%
	2		57 54%	77 65%	38 81%	10 77%	46 41%	94 78%	95 70%	36 63%	17 61%	69 59%	71 81%	15 48%	62 75%	19 53%	73 66%	79 82%
129.	1		10 12%	12 11%	4 9%	0 0%	15 14%	8 7%	11 9%	4 8%	4 16%	9 8%	6 7%	2 8%	4 5%	4 12%	7 7%	8 9%
	2		87 88%	100 89%	40 90%	13 100%	93 86%	112 93%	116 91%	48 92%	22 84%	98 92%	74 92%	26 91%	71 94%	30 88%	99 93%	83 90%
130.	1		24 24%	21 19%	8 17%	3 27%	18 19%	20 17%	15 12%	8 15%	4 16%	18 17%	11 14%	4 14%	8 11%	6 19%	17 16%	6 7%
	2		76 75%	91 81%	38 83%	9 73%	83 21%	101 83%	110 88%	44 85%	22 84%	89 83%	69 85%	25 86%	66 88%	26 81%	88 84%	83 92%
131.	1		16 16%	20 17%	3 8%	2 15%	10 9%	18 15%	12 9%	6 13%	0 0%	15 14%	6 7%	2 7%	7 10%	5 16%	8 8%	11 12%
	2		85 83%	97 83%	42 92%	11 85%	97 91%	103 85%	117 91%	45 87%	27 100%	94 86%	76 93%	27 93%	67 89%	28 83%	96 92%	79 87%
132.	1		11 11%	17 14%	5 11%	1 8%	12 11%	9 7%	10 8%	7 13%	4 14%	11 10%	12 15%	5 17%	13 17%	1 3%	7 7%	12 13%
	2		26 25%	40 34%	15 33%	5 38%	38 34%	37 30%	32 25%	21 40%	9 32%	41 37%	30 37%	12 41%	22 29%	16 47%	41 38%	30 33%

TABLE D--CONTINUED

Item	Response	Class Session	2	3	5		6	7	9	10		11	13		14		15	17
		Program	1 & 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
132.	3		47 45%	48 41%	21 46%	4 31%	45 41%	55 44%	69 53%	21 40%	12 43%	49 45%	31 38%	10 34%	36 47%	13 38%	51 47%	38 42%
	4		14 13%	12 10%	2 4%	3 23%	12 11%	21 17%	13 10%	3 6%	3 11%	9 8%	4 5%	1 3%	5 7%	4 12%	7 7%	8 9%
	5		6 6%	1 1%	3 7%	0 0%	3 3%	2 2%	5 4%	1 2%	0 0%	0 0%	5 6%	1 3%	0 0%	0 0%	1 1%	3 3%
133.	1		24 24%	26 22%	11 24%	1 8%	29 27%	22 18%	19 15%	12 24%	5 18%	46 42%	23 28%	4 14%	14 18%	4 13%	27 25%	16 18%
	2		76 76%	91 78%	35 76%	12 92%	80 73%	99 82%	108 85%	39 76%	23 82%	63 58%	59 72%	25 86%	62 82%	29 86%	80 75%	74 81%
134.	1		10 11%	4 4%	4 9%	0 0%	16 15%	6 5%	9 7%	1 2%	1 4%	5 5%	3 4%	2 7%	4 5%	1 3%	3 3%	2 2%
	2		88 89%	99 96%	40 90%	13 100%	92 85%	113 95%	119 93%	51 98%	27 96%	101 95%	79 96%	26 93%	71 95%	32 97%	101 97%	88 98%

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